APPLIED RESEARCH BRANCH

Strategic Policy

Working Paper

Human Resources Development Canada
Développement des ressources humaines Canada

Canada

SP-575-01-02E

Employment Insurance and Social Assistance: Evidence on Program Interaction

Final Report

Alex Grey
Applied Research Branch
Human Resources Development Canada

January 2002

SP-575-01-02E
(également disponible en français)

The views expressed in papers published by the Applied Research Branch are the authors' and do not necessarily reflect the opinions of Human Resources Development Canada or of the federal government.

The Working Paper Series includes analytical studies and research conducted under the auspices of the Applied Research Branch of Strategic Policy. Papers published in this series incorporate primary research with an empirical or original conceptual orientation, generally forming part of a broader or longer-term program of research in progress. Readers of the series are encouraged to contact the authors with comments and suggestions.

■

This paper is available in French under the title *Évidences sur l'interaction des régimes d'assurance-emploi et d'assistance sociale (0-662-89252-6, RH63-1/575-01-02F).*
La version française de ce document est disponible sous le titre *Évidences sur l'interaction des régimes d'assurance-emploi et d'assistance sociale (0-662-89252-6, RH63-1/575-01-02F).*

■

Paper
ISBN: 0-662-34419-7
Cat. No.: RH63-1/575-01-02E

Internet
ISBN: 0-662-34420-0
Cat. No.: RH63-1/575-01-02E-IN

■

General enquiries regarding the documents published by the Applied Research Branch should be addressed to:

Human Resources Development Canada
Publications Centre
140 Promenade du Portage, Phase IV, Level 0
Gatineau, Quebec, Canada
K1A 0J9

Facsimile: (819) 953-7260
http://www.hrdc-drhc.gc.ca/sp-ps/arb-dgra

Si vous avez des questions concernant les documents publiés par la Direction générale de la recherche appliquée, veuillez communiquer avec :

Développement des ressources humaines Canada
Centre des publications
140 Promenade du Portage, Phase IV, niveau 0
Gatineau (Québec) Canada
K1A 0J9

Télécopieur : (819) 953-7260
http://www.hrdc-drhc.gc.ca/sp-ps/arb-dgra

103-07315/

Abstract

An alternative formulation of the Social Assistance (SA) program in the standard labour-leisure model is proposed, which takes account of both SA eligibility criteria that limit access and barriers to mixing short-term work and SA. Individuals facing employment barriers who do not or no longer qualify for Employment Insurance (EI) benefits may not be immediately eligible for SA. Constraints in the SA program may limit their choices in mixing short-term jobs and SA, pushing individuals to withdraw from employment entirely. The paper considers evidence on program incidence using the EI Coverage Survey for 1999, as well as changes in the incidence pattern between 1987 and 1997 using the Survey of Consumer Finances. The fact that relatively few individuals combine EI and SA receipt during the same year and the increase in long-term jobless dependent on SA are consistent with the importance of barriers to entry to SA and/or difficulties mixing short-term jobs and SA.

Acknowledgements

The author wishes to thank Tom Crossley, Louis Grignon, Marcel Bédard and an anonymous reviewer for comments. The author gratefully acknowledges the assistance of Costa Kapsalis in providing estimates from the EI Coverage Survey.

Table of Contents

1. Introduction **1**

2. Literature review **3**

3. Explanations of Employment Insurance (EI) and Social Assistance (SA) incidence **5**

3.1 The standard labour-leisure model 5

3.2 The introduction of constraints 7

4. The Incidence of Employment Insurance (EI) and Social Assistance (SA) in 1999 ..... **11**

5. Changes in Employment Insurance (EI)/Unemployment Insurance (UI) and Social Assistance (SA) incidence, 1987-1997 ..... **19**

5.1 Change in distribution, 1987-1997 20

5.2 Decomposition analysis 21

5.3 Multivariate analysis 25

5.4 Labour force attachment 30

6. Conclusions **33**

Annex A **35**

Bibliography **43**

List of Tables

Table 1 Potentially eligible and not potentially eligible for Employment Insurance (EI): receipt of EI and Social Assistance (SA) by household status, 1999. 12
Table 2 Unemployed by receipt of public assistance programs by labour market status, 1987 and 1997 21
Table 3 Decomposition of the change in Social Assistance (SA) incidence, 1987-1997 24
Table 4 Logit Regression for Social Assistance (SA) Incidence, 1987 and 1997[a] 26
Table A1 Underlying data from the EI Coverage Survey for Chart 2, 1999 36
Table A2 Underlying data for Chart 4a/b from Table 2, 1987 and 1997 39

List of Charts

Chart 1a Budget Constraint with Employment Insurance (EI) and Social Assistance (SA) 5
Chart 1b Budget Constraint with Employment Insurance (EI) and Social Assistance (SA) 7
Chart 1c Budget Constraint with Employment Insurance (EI) and Social Assistance (SA) 9
Chart 2 Budget Constraint with Employment Insurance (EI) and Social Assistance (SA) Distribution of the unemployed, EI Coverage Survey 1999 13
Chart 3 Incidence of SA among the unemployed by duration of joblessness, 1999 ... 15
Chart 4a Budget Constraint with Employment Insurance (EI) and Social Assistance (SA). Distribution of the unemployed, EI Coverage Survey 1999. Unemployed in households with no earner 17
Chart 4b Budget Constraint with Employment Insurance (EI) and Social Assistance (SA). Distribution of the unemployed, EI Coverage Survey, 1999. Unemployed in households with at least one earner 17
Chart 5a Budget Constraint with Employment Insurance (EI)/ Unemployment Insurance (UI) and Social Assistance (SA) Distribution of the unemployed, SCF 1987 23
Chart 5b Budget Constraint with Employment Insurance (EI)/ Unemployment Insurance (UI) and Social Assistance (SA) Distribution of the unemployed, SCF 1997 23
Chart 6a Budget Constraint with Employment Insurance (EI)/ Unemployment Insurance (UI) and Social Assistance (SA). Average weeks of employment, unemployment and inactivity, SCF 1987.... 31
Chart 6b Budget Constraint with Employment Insurance (EI)/Unemployment Insurance (UI) and Social Assistance (SA). Average weeks of employment, unemployment and inactivity, SCF 1997 31

1. Introduction

Employment Insurance (EI) and Social Assistance (SA) are the two principal programs in Canada's social safety net for the non-elderly population. Interest in the interaction between the two programs in providing income support to the unemployed has been heightened by substantial policy changes during the 1990s affecting both programs, such as the succession of EI/UI policy reforms in 1990, 1993, 1994 and 1996. The standard approach to analysing patterns of incidence of EI and SA uses the labour-leisure model, which emphasises principally monetary incentives of the two programs. This paper proposes a revised labour-leisure model that incorporates SA program constraints. Furthermore, labour market constraints may interact with program eligibility constraints to influence patterns of EI and SA incidence, and potentially the pattern of labour market participation. After a brief literature review, section iii suggests modifications to the standard labour-leisure model. The paper then considers the aggregate incidence of EI and SA among the unemployed at one point in time using data from the EI Coverage Survey for 1999, including an assessment of the impact of household status. Section v looks at shifts in the distribution of unemployed by EI and SA incidence between 1987 and 1997 and evaluates the increase in SA incidence within groups using the Survey of Consumer Finances (SCF). A brief concluding section summarises the main findings.

2. *Literature review*

Most studies explaining patterns of Employment Insurance (EI)/Unemployment Insurance (UI) and Social Assistance (SA) receipt among the unemployed tend to test the standard labour-leisure model, which emphasises relative program incentives. Using aggregate data, Arnau Crémieux and Fortin (1998) concluded that EI/UI program changes over the 1990s were associated with a substantial increase in the incidence of SA. Stark (1997) did not find that variables measuring EI/UI generosity had a significant effect on SA usage. Using a more disaggregated approach, Stark (1998) found that the availability of EI/UI had a significant effect on SA usage, though this was not the case with respect to SA generosity. Stewart and Dooley (1998) found that the adequacy of EI/UI did not have an impact on SA usage for any group, while SA benefit levels were related to SA usage by single men.

Among studies using micro-economic data Barrett, Doiron, Green and Riddell (1996) found that there is a large overlap in the clientele of EI/UI and SA. A large proportion of SA recipients also participated in the UI program in the same year and there is not a common pattern of differences in characteristics between the two groups. Browning, Jones and Kuhn (1995) found that UI policy changes restricting benefits to voluntary quitters were associated with increased use of SA. However, the availability of SA benefits does not apparently influence the probability of re-employment for individuals close to exhausting their UI benefits. Christofides, Stengos and Swidinsky (1997) found that receipt of UI was associated with a lower incidence of SA use, though SA program parameters did not generally influence participation in SA. Using a more complex but still very similar model to the labour-leisure model with EI/UI and SA as outlined in the next section, Fortin, Lacroix and Thibault (1999) found that increases in UI eligibility criteria and decreases in the UI replacement rate were associated with a higher re-entry rate into social assistance for single mothers.[1]

[1] A large part of the observed effect of the UI replacement rate is likely to be purely mechanical, since eligibility for SA benefits is importantly determined by family income (including EI/UI benefits) falling below a threshold level.

3. *Explanations of Employment Insurance (EI) and Social Assistance (SA) incidence*

This section proposes modifications to the standard labour-leisure model that more accurately reflect the benefits available in the SA program and most importantly, constraints on SA receipt stemming from program eligibility criteria. For individuals facing an employment constraint, program eligibility criteria can have a more important impact.

3.1 The standard labour-leisure model

The standard labour-leisure model emphasises relative program incentives, primarily monetary, as an explanation for the relative incidence of EI and SA use among the unemployed. In the model of Fortin (1984), EI subsidises employment for part-year workers, who at best would just exhaust EI benefits before finding another job. Arnau, Crémieux and Fortin (1998) and Fortin, Lacroix and Thibault (1999) both analyse participation in EI and SA by groups with a weaker attachment to the labour force using measures of the relative incentives of the two programs. In a similar vein, Chart 1a presents a standard labour-leisure framework for an individual with a 52-week time horizon. Line *a* shows the annual budget constraint in the absence of EI and SA for a wage/salary earner where earnings are assumed to be 2/3 of the average hourly rate for all employees for 1997.

Chart 1a
Budget Constraint with Employment Insurance (EI) and Social Assistance (SA)

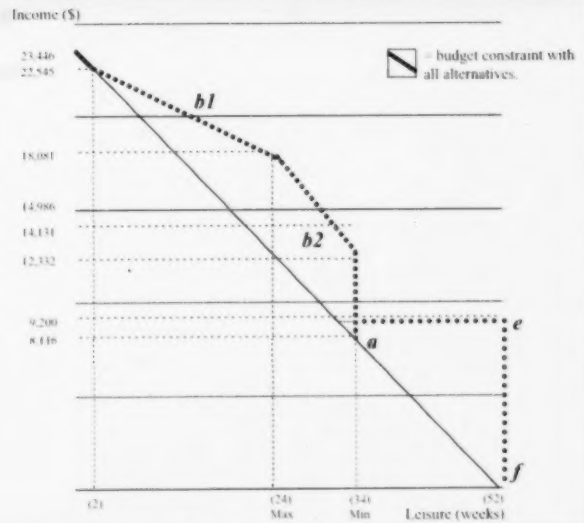
— Line *a* = budget constraint for wage earner.
slope = -w = $451/week

····· Line *b* = Budget constraint for EI recipient with recent employment.
b1: slope = -w(1-r) = $202/week
b2: slope = -w(1+r * D/M) = $574/week

Point *e* = Income for full-time SA recipient with no recent employment.

Point *f* = Individuals with no SA and no recent employment.

w = Wage rate (per week)
s = SA benefit rate (per week)
r = Replacement rate of EI benefits.
D = Maximum duration of EI/UI benefits for a minimally – qualified worker
M = Minimum duration of employment needed to qualify for EI/UI



Line *a)* Earnings are based on 2/3 of average hourly earnings for all employees for 1997 or $11.27/hour. Weekly earnings are based on a work week of 40 hours.

Line *b)* Under current EI program for an individual living in a region where the unemployment rate is between 7.0 and 8.0 percent. The minimum entrance requirement is 18 weeks of work. The individual reaches Max (where weeks of work + weeks of EI + 2 weeks waiting period = 52 weeks) at 28 weeks of work.

Line c) The average weekly SA benefit rate in 1996 was $177. This was based on weighted average benefits by class of beneficiary by province. Estimates are weighted by the number of beneficiaries in each class in each province [National Council on Welfare (1997) and unpublished data from HRDC]. Line *c* intersects line *a* at the origin as it is assumed there is no waiting period.

Line *d)* This is based on both the EI criteria in line *a* and the SA criteria in line *c*.

Line *b* (sections *b1* and *b2*) shows the income frontier for an individual who is both employed and unemployed part-year and qualifies for EI in the absence of SA. This is an example of an individual who qualifies for EI under the *EI Act of 1996* in an EI region where the unemployment rate is 7.0-8.0 per cent, who is eligible for EI after 18 weeks of insured employment, and who initially receives 17 weeks of benefits at a replacement rate of 55 per cent. An individual receives 1 week of EI benefits for each additional week worked up to a maximum of 26 weeks. At *Min* a worker just qualifies for EI, while at *Max* all weeks of non-employment are fully covered by EI. Line *b* intersects line *a* at the standard two-week waiting period for EI benefits. Individuals who are apt to switch from EI to SA are more likely to have relatively fewer weeks of work. Arnau, Cremieux and Fortin (1998) and Fortin, Lacroix and Thibault (1999) implicitly assume individuals are to the right of *Max* by using a variable that measures the EI/UI "subsidy" to employment. SA is usually represented by a horizontal line extending from point *e* (full-year dependence on SA) to the wage curve, assuming a 100 per cent tax-back rate on earned income for SA recipients. In Chart 1a, the income frontier for an individual facing all these alternatives is traced by the heavier line. Corner solutions play an important role in that individuals will tend to be concentrated at *Max* on line *b* and at point *e* and many studies test the hypothesis that changes in the relative incentives of EI and SA will cause shifts between them.

However, the modelling of SA in Chart 1a is not entirely accurate. In keeping with the objective of showing the standard model, Chart 1b shows a revised budget for an individual who receives SA (in the absence of EI) for at least part of the year (line *c*). The standard representation of SA is true in the context of a one-month period where most of earnings are in fact taxed back. However, on an annual basis it is possible to combine both employment and SA without a tax-back of earnings as SA benefit levels are determined by current income (defined in the context of one month) and current assets. The slope of line *c* is based on a weighted average of annual SA benefit rates by class of SA beneficiary and province. Line *c* intersects line *a* at 0 weeks assuming there is no waiting period for SA.[2]

Individuals who combine part-year employment, EI and SA during the same year would fall on line *d*. This is a better alternative than receipt of EI alone over the range of weeks of unemployment during the year which are not fully covered by EI, as receipt of SA benefits for the uncovered weeks increases income. Line *d* begins at the same level of weeks unemployed as line *b*, and intersects line *b* at Max, where all weeks of the year are taken up by employment and unemployment covered by EI except the EI waiting period. Beyond *Max*, it does not make sense to substitute additional weeks of SA for weeks of EI, assuming as in this case that the benefit rate for EI is higher than that of SA.

---

[2] In actual fact there is likely a waiting period but as SA regulations vary across provinces and eligibility for SA benefits within provinces depends on class of beneficiary, it is difficult to calculate a national estimate.

Chart 1b
Budget Constraint with Employment Insurance (EI) and Social Assistance (SA)

— Line *a* = budget constraint for wage earner.
slope = -w = $451/week

····· Line *b* = Budget constraint for EI recipient with recent employment.
b1: slope = -w(1-*r*) = $202/week
b2: slope = -w(1+*r* * D/M) = $574/week

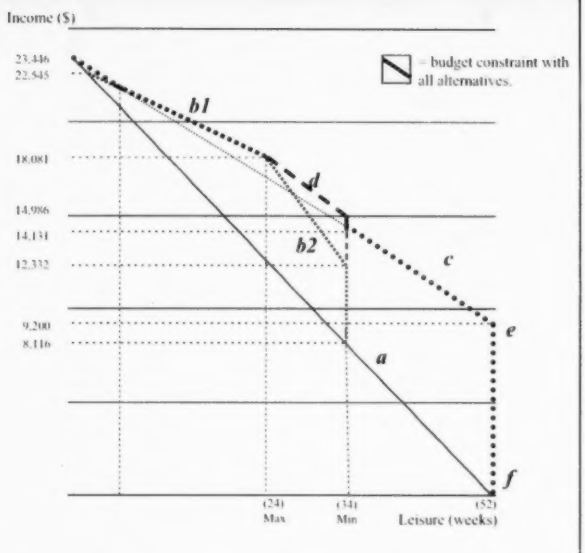
····· Line *c* = Budget constraint for SA recipient with recent employment.
slope = -(w-s) = $274/week

– – Line *d* = Budget constraint for EI and SA recipient with recent employment.
slope = -w(1+*r* * D/M) + s(1+ DM) = $310/week

Point *e* = Income for full-time SA recipient with no recent employment.

Point *f* = Individuals with no SA and no recent employment.

w = Wage rate (per week)
s = SA benefit rate (per week)
r = Replacement rate of EI benefits.
D = Maximum duration of EI/UI benefits for a minimally – qualified worker
M = Minimum duration of employment needed to qualify for EI/UI



Line *a)* Earnings are based on 2/3 of average hourly earnings for all employees for 1997 or $11.27/hour. Weekly earnings are based on a work week of 40 hours.

Line *b*) Under current EI program for an individual living in a region where the unemployment rate is between 7.0 and 8.0 percent. The minimum entrance requirement is 18 weeks of work. The individual reaches Max (where weeks of work + weeks of EI + 2 weeks waiting period = 52 weeks) at 28 weeks of work.

Line *c*) The average weekly SA benefit rate in 1996 was $177. This was based on weighted average benefits by class of beneficiary by province. Estimates are weighted by the number of beneficiaries in each class in each province [National Council on Welfare (1997) and unpublished data from HRDC]. Line *c* intersects line *a* at the origin as it is assumed there is no waiting period.

Line *d*) This is based on both the EI criteria in line *a* and the SA criteria in line *c*.

In the revised standard model presented in Chart 1b, individuals face a choice among: part-year work alone (points on line *a*); part-year work and EI (points on line *b*); part-year work and SA (points on line *c*); part-year work, EI and SA (line *d*); and SA alone (point *e*). The income frontier for an individual with all these alternatives is traced out by the heavier line in Chart 1b. As long as some portion of unemployment is not covered by EI, receipt of SA during the uncovered weeks provides a higher level of income. Therefore, lines *c* and *d* provide the highest level of income-unemployment combinations over a significant range for those with relatively few weeks of employment, a range which rises as the wage rate declines.

3.2 The introduction of constraints

The way SA was graphed in Chart 1b is still not a very accurate modelling of the SA program which has a number of barriers to entry as well as barriers to exit. Means testing of SA based on household income and household assets limits eligibility. In addition, the social stigma associated with SA, particularly the negative view of SA clients held by employers, limits access. This means that options along lines *c* and *d* will be available to fewer individuals as the unemployed with a working spouse or with sufficient assets will

not be eligible for SA. The unemployed in single-earner households are most likely to qualify for SA. However, over the longer term, more households will come to meet SA eligibility criteria. Households with insufficient income, potentially stemming from uncovered unemployment, will eventually exhaust their assets and households with more than one earner may become eligible for SA if both earners become jobless.

Unemployed SA recipients are subject to constraints in the SA program that potentially limit mixing employment with SA. The first is high effective marginal tax rates reflecting the withdrawal of SA benefits for recipients who take jobs. The estimated net earnings replacement rates for SA in Ontario in 1995 varied from between 25 per cent for a single individual to 59 per cent for a single earner married couple with two children earning the average production worker wage. This rises to between 35 per cent and 77 per cent respectively for individuals in jobs where earnings are two-thirds of the wage of the average production worker (OECD 1999a). The full or partial withdrawal of supplemental SA benefits such as a subsidy for housing or access to social housing, supplemental health and dental care coverage and day-care subsidies (National Council of Welfare 1993; OECD 1999b) adds to the cost of leaving SA.

There are additional costs to leaving SA that become fixed costs of taking employment. The probability of incurring these fixed costs depends on the probability of returning to SA. This in turn is dependent on the risk of future unemployment and the probability that it will be covered by EI. An important fixed cost is re-application for means-tested benefits which generates considerable uncertainty among claimants (Atkinson and Micklewright, 1991). The re-application process for SA, involving complex forms is another fixed cost of leaving SA. The administration associated with the full or partial withdrawal of supplemental SA benefits such as housing subsidies or social housing when the individual takes a job, as well as the readjustment of these benefits when they return to SA, adds to the fixed costs of taking a temporary job. These factors may discourage SA recipients from mixing short-term employment and SA with the result that they may leave the labour force and rely on SA full-time. In addition, the SA program lacks the institutional structure to ensure that job-search requirements are adequately met compared to the EI program. As a result, SA administrators may judge the job search of SA recipients who return to SA after short-term jobs, as inadequate. These costs may be relatively large compared to the net income gains from taking a short-term job, and mean that points on lines *c* and *d* may not really be part of the opportunity set of individuals receiving SA.

The labour-leisure framework as represented in Chart 1c is probably a more accurate representation of the program incentives facing individuals. While it is difficult to incorporate the impact of non-monetary constraints associated with SA one approximation might be to model the SA program as a vertical line from point *f* to point *e* as shown in Chart 1c. This captures both the impact of SA eligibility constraints which mean that line *c* is not an alternative for many potential SA recipients because they either do not meet household income or asset means tests. As well, it reflects barriers to mixing part-year employment leading SA recipients to be constrained to non-employment. The model represented in Chart 1c entails corner solutions, notably a shift from *Max* on line *b* or points to the right of it to point *e*, as did the original model presented in Chart 1a.

For individuals facing an employment constraint, incomes may be so low that SA provides significantly greater benefits than the alternatives. Quantity-constrained individuals may either be unable to accumulate a sufficient number of hours of work to qualify for EI or, they may experience spells of unemployment that exhaust EI benefits. In Chart 1c, a simple absolute constraint on the number of weeks worked at 17 weeks, less than the minimum necessary to qualify for EI is represented by the vertical dotted line. Phipps (1990 and 1991) develops a more sophisticated approach, where individuals are assumed to be constrained if they cannot work the number of weeks desired at their observed wage rate. These unemployed therefore face a choice of points along line *a* up to the employment constraint or along the vertical segment *f-e* if they choose SA.

For those who face employment constraints, the dynamics of the transition between EI and SA is very different from those who do. In the standard model, individuals react principally to changes in relative program monetary benefits, though access to SA is more limited. In the "constrained" model, the interaction of labour market constraints (the limit on the weeks of employment) with constraints stemming from program criteria is crucial. Individuals become subject to a series of constraints that push them from part-year employment and EI to part-year employment and joblessness not supported by EI and then to complete withdrawal from the labour force supported by SA. The cumulative effect of these constraints can be to change the labour force participation patterns of individuals, in this case, causing abandonment of part-year employment.

Chart 1c
Budget Constraint with Employment Insurance (EI) and Social Assistance (SA)

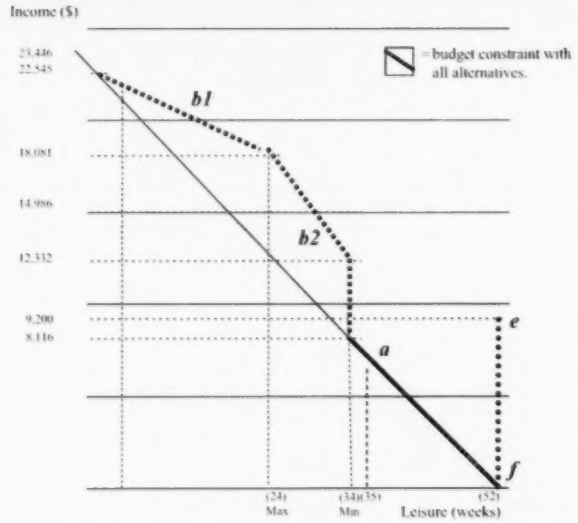
— Line *a* = budget constraint for wage earner. slope = -w = $451/week

····· Line *b* = Budget constraint for EI recipient with recent employment.
b1: slope = -w(1-*r*) = $202/week
b2: slope = -w(1+*r* * D/M) = $574/week

Point *e* = Income for full-time SA recipient with no recent employment.

Point *f* = Individuals with no SA and no recent employment.

W = Wage rate (per week)
s = SA benefit rate (per week)
r = Replacement rate of EI benefits.
D = Maximum duration of EI/UI benefits for a minimally – qualified worker
M = Minimum duration of employment needed to qualify for EI/UI



Line *a)* Earnings are based on 2/3 of average hourly earnings for all employees for 1997 or $11.27/hour. Weekly earnings are based on a work week of 40 hours.

Line *b*) Under current EI program for an individual living in a region where the unemployment rate is between 7.0 and 8.0 percent. The minimum entrance requirement is 18 weeks of work. The individual reaches Max (where weeks of work + weeks of EI + 2 weeks waiting period = 52 weeks) at 28 weeks of work.

Line *c*) The average weekly SA benefit rate in 1996 was $177. This was based on weighted average benefits by class of beneficiary by province. Estimates are weighted by the number of beneficiaries in each class in each province [National Council on Welfare (1997) and unpublished data from HRDC]. Line *c* intersects line *a* at the origin as it is assumed there is no waiting period.

Line *d*) This is based on both the EI criteria in line *a* and the SA criteria in line *c*.

4. The Incidence of Employment Insurance (EI) and Social Assistance (SA) in 1999

The previous section outlined a revised standard labour-leisure model and a simple "constrained" model. The EI Coverage Survey is a recent snapshot of the incidence of EI and SA. It is a quarterly supplement to the Labour Force Survey conducted using a panel of the full survey sample. It surveys a subset of those who are either currently unemployed or who have withdrawn from the labour force, but have been employed in the previous two years. Over 1999, the sample included approximately 2,500 persons per survey. The EI Coverage Survey provides information on the incidence of EI and SA among these individuals averaged over four points in the year, and permits a systematic evaluation of the categories of workers covered by the EI program as well as the characteristics of those who are not eligible to receive benefits.

A general overview of the pattern of EI and SA receipt is presented in Table 1, which follows a recent convention of presenting data on EI receipt in a framework that distinguishes between potentially eligible and ineligible claimants [Statistics Canada (1999)]. The distinction between potentially and not-potentially eligible for EI benefits is largely based on EI program eligibility criteria. Among the potentially eligible for EI, 54.7 per cent of the unemployed received EI benefits. Receipt of SA benefits was relatively low accounting for only 6.7 per cent of the potentially eligible unemployed. As would be expected, the receipt of EI sharply reduced the need to make use of SA: the incidence of SA use among individuals who had met EI entrance requirements was relatively low at 3.0 per cent.

However, some fraction of those who had recent work experience may have to turn to SA more rapidly if they are ineligible for EI or exhaust EI benefits and have no alternative means of support. The incidence of SA use was highest (21.2 per cent) for individuals who were unable to accumulate enough hours of work to be eligible for EI. It was higher than the incidence among individuals who had claimed EI during the previous 12 months but had exhausted their EI benefits (10.3 per cent). The lower incidence of SA use among EI exhaustees than those who did not qualify for EI may stem from better work histories and less time without income support.

Those who had no employment in the previous twelve months accounted for the majority of individuals not potentially eligible for EI. Among this group, the incidence of SA use was noticeably higher, at 21.7 per cent (See Table 1). In fact, of the 159,000 unemployed who were in households that received SA, 97,000 or 61.1 per cent had been jobless at least 12 months. This group included both the unemployed who are recent labour force entrants/re-entrants and unemployed job-losers who had become long-term jobless. The incidence of SA use was highest (33.4 per cent, Column 1e) among the long-term jobless (more than 12 months) who had previously worked compared to 9.7 per cent among new entrants/re-entrants. New entrants/re-entrants may be able to depend on the income of other household members for income support as they had previously been able to remain outside the labour force and they also may not have experienced labour market difficulties for as long a period.

Table 1

Potentially eligible and not potentially eligible for Employment Insurance (EI): receipt of EI and Social Assistance (SA) by household status, 1999.

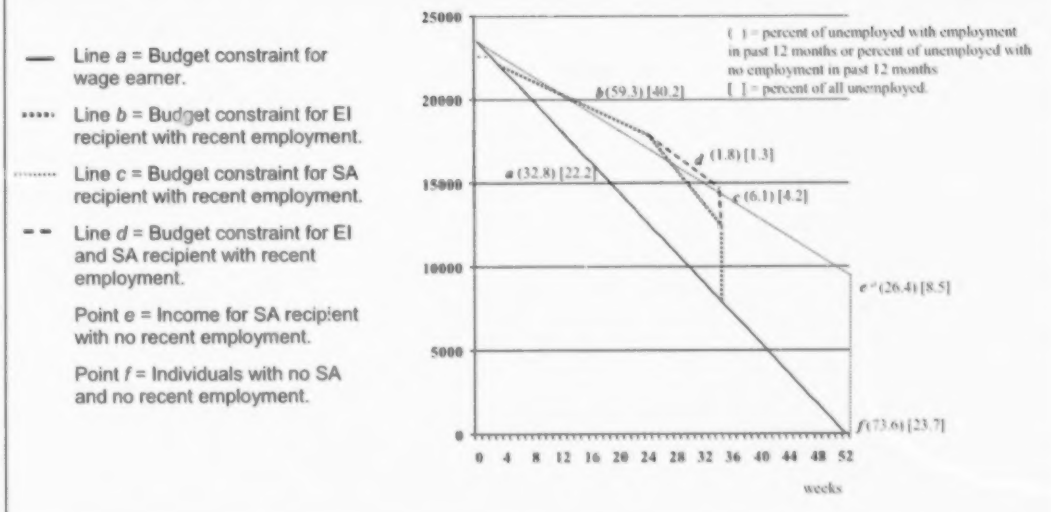
	All Persons					Unattached + couple (no earner) + single parent				
	1a	1b	1c	1d	1e	2a	2b	2c	2d	2e
Category of unemployed	All unemployed	EI incidence	SA incidence	EI incidence (per cent)	SA incidence (per cent)	Unemployed	EI incidence	SA incidence	EI incidence (per cent)	SA incidence (per cent)
All unemployed	**1,141,000**	**323,000**	**159,000**	**28.3%**	**13.9%**	**579,000**	**153,000**	**148,000**	**26.4%**	**25.6%**
Not potentially eligible for EI	**550,000**	**0**	**119,000**	**0.0%**	**21.7%**	**297,000**	**0**	**114,000**	**0.0%**	**38.4%**
No work in past 12 months	367,000	0	97,000	0.0%	26.4%	215,000	0	92,000	0.0%	42.9%
New entrant/Re-entrant	109,000	0	11,000	0.0%	9.7%	42,000	0	10,000	0.0%	24.5%
Worked more than one year ago	259,000	0	86,000	0.0%	33.4%	174,000	0	82,000	0.0%	47.2%
Self employed	56,000	0	9,000	0.0%	15.5%	27,000	0	8,000	0.0%	29.9%
Reason for leaving										
Left to school	53,000	0	..	0.0%	2.1%	21,000	0	..	0.0%	5.2%
Voluntary quit with no just cause	74,000	0	13,000	0.0%	17.0%	33,000	0	13,000	0.0%	38.0%
Potentially eligible for EI	**591,000**	**323,000**	**39,000**	**54.7%**	**6.7%**	**282,000**	**153,000**	**34,000**	**54.2%**	**12.1%**
Did not meet entrance requirement	118,000	0	25,000	0.0%	21.2%	58,000	0	22,000	0.0%	38.0%
Met entrance requirement	473,000	323,000	14,000	68.3%	3.0%	224,000	153,000	12,000	68.3%	5.4%
Did not claim EI	28,000	0	0	0.0%	1.6%	14,000	0	0	0.0%	3.2%
Claimed EI	445,000	323,000	14,000	72.6%	3.1%	210,000	153,000	12,000	72.8%	5.6%
Did not receive EI benefits since last job	10,000	0	0	0.0%	3.3%	4,000	0	0	0.0%	8.0%
Received or established right to EI benefits since last job	435,000	323,000	14,000	74.3%	3.1%	206,000	153,000	11,000	74.3%	5.5%
Claimed EI in previous 12 months - exhausted benefits	56,000	0	6,000	0.0%	10.3%	30,000	0	5,000	0.0%	17.8%
Received or established right to benefits	379,000	323,000	8,000	85.2%	2.1%	176,000	153,000	6,000	86.8%	3.4%
Waiting for benefits	56,000	0	..	0.0%	1.1%	23,000	0	..	0.0%	2.7%
Received benefits in reference week	323,000	323,000	7,000	100.0%	2.2%	153,000	153,000	5,000	100.0%	3.6%

Source: Statistics Canada, EI Coverage Survey, unpublished data.

As the distinction between potentially and not potentially eligible for EI is based on particular criteria related to the EI program, it is not entirely appropriate in analysing the interaction between EI and SA because it mixes various reasons for non-receipt of EI. However, the main difference between the two groups is whether or not an individual worked in the previous year. As unemployed individuals potentially eligible for EI actually all had recent employment, they are individuals potentially at points on lines *a*, *b*, *c* or *d* in Chart 1b. The unemployed who worked during the year include not only individuals classed as potentially eligible for EI in Table 1 but also the self-employed, individuals who left employment to return to school or those who left employment voluntarily without just cause.

Chart 2 presents the distribution of unemployed using the framework proposed in Chart 1b as this chart has the largest opportunity set. A more detailed explanation of the translation of data from Table 1 to Chart 2 is presented in Annex A, Table A1. The distribution is more consistent with the model presented in Chart 1c, which incorporates significant constraints on SA use. The majority of all unemployed (40.2 per cent) was eligible to receive EI benefits in 1999 (on line *b*). The next largest group of unemployed receiving public income support were the 8.5 per cent who were long-term jobless and in receipt of SA. A total of 5.5 per cent of the unemployed had employment in the past 12 months and were in receipt of SA (sum of individuals on lines *c* and *d*), which is not large given that lines *c* and *d* would provide the highest level of income over a significant range of employment outcomes if these alternatives were more widely available.

Chart 2
Budget Constraint with Employment Insurance (EI) and Social Assistance (SA)
Distribution of the unemployed, EI Coverage Survey 1999


Line a = Budget constraint for wage earner.
Line b = Budget constraint for EI recipient with recent employment.
Line c = Budget constraint for SA recipient with recent employment.
Line d = Budget constraint for EI and SA recipient with recent employment.
Point e = Income for SA recipient with no recent employment.
Point f = Individuals with no SA and no recent employment.
( ) = percent of unemployed with employment in past 12 months or percent of unemployed with no employment in past 12 months
[ ] = percent of all unemployed.
25000
20000
15000
10000
5000
0
b (59.3) [40.2]
d (1.8) [1.3]
a (32.8) [22.2]
c (6.1) [4.2]
e a (26.4) [8.5]
f (73.6) [23.7]
0 4 8 12 16 20 24 28 32 36 40 44 48 52
weeks

a) Point **e** includes individuals who received SA, EI or both EI and SA.
Source: Statistics Canada, EI Coverage Survey unpublished data.

The pattern of the distribution of individuals potentially in between EI eligibility on line *b* and long-term joblessness dependent on SA (point *e*) is also consistent with both entry barriers to SA and barriers to combining short-term jobs and SA. A much larger share (22.2 per cent) of the unemployed were on line *a* rather than on line *c* (4.2 per cent) in receipt of SA benefits, though line *c* is preferable to line *a* over a significant range. In particular, 36.7 per cent of individuals on line *a* did not have enough weeks of employment in the past 12 months to qualify for EI benefits and would therefore be on the lower part of line *a*, to the right of its intersection with line *b*.[3] The relatively high share of individuals on the lower portion of line *a* also supports the existence of employment constraints affecting some individuals. Relatively few individuals (1.3 per cent) combined part-year employment, EI and SA in the same twelve month period (line *d*), yet this alternative provides a higher income level where EI benefits do not cover the full period of joblessness during the year. Moreover, the share of individuals on lines *c* and *d* who were combining part-year work and SA on a longer-term basis was likely even lower than shown in Chart 2, as some were in transit to point *e*. Individuals in transit could have lost or quit their job, failed to qualify for EI or have exhausted EI and therefore turned to SA in the short term so that though they have recent employment, they are in fact moving to joblessness and complete dependence on SA. Of the 4.2 per cent of all unemployed with employment in the past 12 months and in receipt of SA (on line *c*), 2.2 per cent did not meet EI entrance requirements and 1.1 per cent had voluntarily quit their last job. Of the 1.3 per cent who worked, received EI and were in receipt of SA (on line *d*), 0.5 per cent had exhausted EI benefits (see Table A1).

Two bits of evidence support the assertion that a significant share of the unemployed were employment-constrained. If the shift of individuals from line *b* to point *e* were a choice based on relative incentives, there is little reason for individuals to delay opting for SA, yet the incidence of SA rises significantly only after considerable time has elapsed since job loss. Chart 3 shows that in 1999, the incidence of SA rose from 7.9 percent for those jobless 0-12 months to 23.7 per cent for those jobless 13-24 months to 33.1 per cent for those who last worked 37 to 60 months ago and 43.9 per cent for those who had worked more than 60 months ago. Stark (1999) found that the incidence of SA use rose significantly beginning 50 weeks after separation. This is more consistent with the exhaustion of other alternatives, such as would be the case if individuals were employment-constrained. Second, if moving from intermittent employment and EI usage to SA reflected the standard model, individuals choosing full-time reliance on SA would likely have qualified for EI, given the relatively long gap between employment separation and SA receipt. However, in 1998 among those who were jobless 13 to 24 months only 41.5 per cent had received EI benefits following separation. This compares with an incidence of EI claims of 61.3 per cent for individuals who had worked and became unemployed within the previous 12 months.

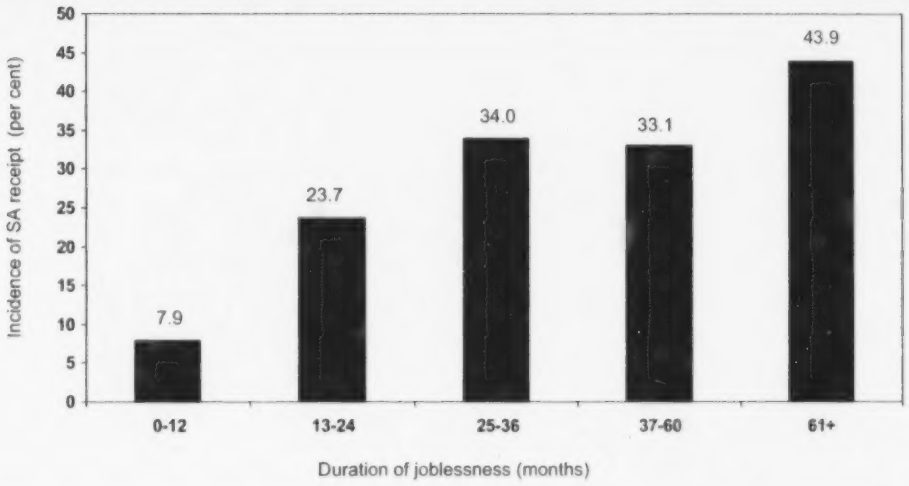
One explanation for the apparently long period with neither employment nor public income support is simply SA eligibility criteria. According to this hypothesis, individuals with assets above SA specified means-tested levels were forced to rely on these assets until they were exhausted and they met SA entrance requirements. However, this sort of behaviour seems more consistent with individuals facing an employment constraint.

---

[3] This is based on results in Table A1 which show that 93,000 of the 253,000 individuals or 36.7 per cent on line a failed to work enough weeks during the previous 12 weeks to qualify for EI benefits.

Another explanation is that there may also have been other earners in the household, however it also seems unlikely that households would wait until the household was jobless so that they could opt for SA. This explanation is also more consistent with individuals being employment-constrained.

Chart 3
Incidence of SA among the unemployed by duration of joblessness, 1999



a) Based on revised estimates from the EI Coverage Survey. These differ slightly from estimates used elsewhere in the paper.

Source: Statistics Canada, EI Coverage Survey, 1999 unpublished data.

Household status

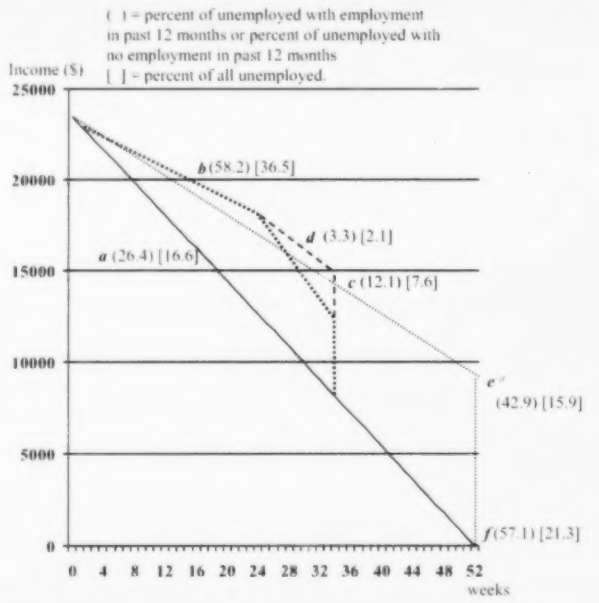
An important constraint on SA receipt is means testing based on household income. Separating the unemployed into those in households without an earner (Chart 4a)[4] where this constraint is not binding and the unemployed in households with at least one earner (Chart 4b) where it is binding allows for an assessment of the impact of this constraint. There should be many more unemployed in households without an earner in receipt of SA as the unemployed in households with another earner are constrained in their ability to access SA benefits. In Chart 4a, those in receipt of SA (the sum of *c*, *d* and *e*) accounted for 25.6 per cent of the unemployed compared to only 1.8 per cent of the unemployed in Chart 4b. This included significant numbers with recent employment on lines *c* and *d* (9.7 per cent) in Chart 4a.

[4] These unemployed are unattached individuals, single parent households and the unemployed in couple households with no earner. The inclusion of unemployed dependent children tends to understate the importance of EI as a relatively low share of these individuals receives EI.

Conversely, part-year employment, without additional income from EI, and potentially even with EI benefits, may be less attractive or viable for the unemployed in single-earner households. Among the unemployed in households without an earner there were only 16.6 per cent with part-year employment only (on line *a*) compared to 28.0 per cent of the unemployed in households with at least one earner. Those with part-year employment and eligible for EI (on line *b*) accounted for 36.5 per cent of all unemployed in households without an earner compared to 44.0 per cent of all unemployed in households with at least one earner. The gap in the share of unemployed on line *a* between the unemployed in households without an earner compared to those with an earner suggests that this alternative is less viable and that therefore a share of the unemployed in these households may be pushed to SA.

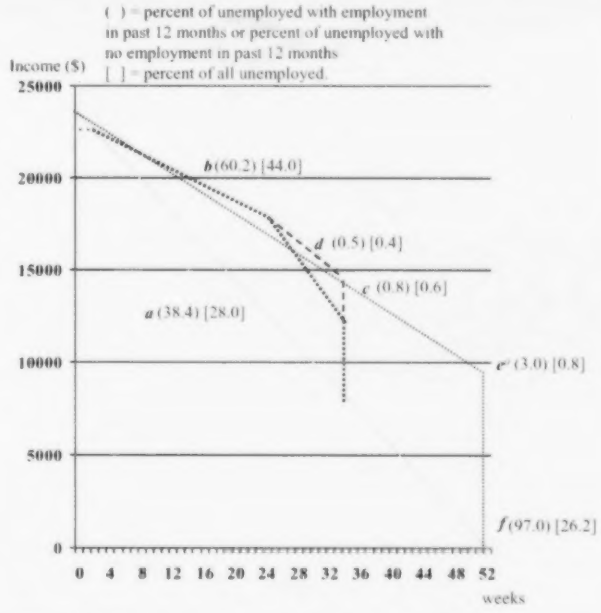
The evidence suggests that the difficulty mixing short-term work and SA may play a significant role in explaining the relatively high share of long-term jobless among the unemployed in households without an earner (37.2 per cent, sum of points *e* and *f*) in Chart 4a compared to the unemployed in households with at least one earner (27.0 per cent) in Chart 4b. The difference reflected a high incidence of SA use at 15.9 per cent among the former (point *e*) compared to only 0.8 per cent among the latter. Given that 26.2 per cent of the latter were not in receipt of SA (at point *f*) compared to 21.3 per cent of the former, the unemployed in households without an earner may not necessarily have characteristics that make them more prone to long-term joblessness. The significant share of unemployed in households without an earner at point *f* may also be affected by SA eligibility criteria as it included individuals depending on savings, potentially because they do not meet the SA asset test. Disincentives to take employment once on SA, was put forward by Gregg and Wadsworth (1996) as a reason why unemployment was becoming more concentrated in jobless households.

Chart 4a
Budget Constraint with Employment Insurance (EI) and Social Assistance (SA)
Distribution of the unemployed, EI Coverage Survey 1999
Unemployed in households with no earner



Line *a* = budget constraint for wage earner.
Line *b* = Budget constraint for EI recipient with recent employment.
Line *c* = Budget constraint for SA recipient with recent employment.

Chart 4b
Budget Constraint with Employment Insurance (EI) and Social Assistance (SA)
Distribution of the unemployed, EI Coverage Survey, 1999
Unemployed in households with at least one earner


( ) = percent of unemployed with employment in past 12 months or percent of unemployed with no employment in past 12 months
[ ] = percent of all unemployed.
Income ($)
25000
20000
15000
10000
5000
0
b (60.2) [44.0]
d (0.5) [0.4]
c (0.8) [0.6]
a (38.4) [28.0]
e (3.0) [0.8]
f (97.0) [26.2]
0 4 8 12 16 20 24 28 32 36 40 44 48 52
weeks

Line *d* = Budget constraint for EI and SA recipient with recent employment.
Point *e* = Income for SA recipient with no recent employment.
Point *f* = Individuals with no SA and no recent employment

a) Point **e** includes individuals who received SA, EI or both EI and SA.

Source: Statistics Canada, EI Coverage Survey unpublished data.

5. *Changes in Employment Insurance (EI)/ Unemployment Insurance (UI) and Social Assistance (SA) incidence, 1987-1997*

This section presents distributions for 1987 and 1997 from the Survey of Consumer Finances (SCF) using the same framework that was used to analyse data from the EI Coverage Survey. Between 1987 and 1997, there was a significant change in EI/UI parameters - the Sargent index fell from 143.9 to 96.0 between 1987 and 1997 (1970=100) (Sargent, 1995).[5] A summary index of the level of real SA benefits was at approximately the same level in 1997 as it was in 1987, after increasing in the intervening years.[6] The model presented in Chart 1c would therefore predict a shift in the distribution of unemployed from part-year employment and EI to long-term joblessness and SA receipt between 1987 and 1997. In general, labour market conditions for 1987 and 1997, as measured by the unemployment rate were relatively similar (8.8 per cent and 9.1 per cent respectively) so differences in the incidence of EI and SA are more likely to reflect structural changes in the use of the two programs than the economic cycle. One notable difference is the share of long-term unemployed (53 weeks or more) which increased from 9.1 per cent of the unemployed in 1987 to 12.2 per cent in 1997.

Chart 5a/b presents the distributions for these two years using the same framework that was used to analyse data from the EI Coverage Survey. However, changes in the distribution of EI and SA incidence may have been influenced by changes in the distribution of the unemployed. Therefore, first a simple decomposition analysis was undertaken to give an idea of the relative importance of changes in the distribution of unemployed to SA incidence compared to an increase in the incidence of SA within groups. This is followed by a multivariate analysis, which confirms the increase in SA incidence within groups, controlling for a much broader range of individual characteristics. Finally, this section also considers data on the labour market attachment of the unemployed, particularly the long-term jobless, which is relevant to a comparison of the standard and constrained models.

In the SCF data are available on the incidence of EI/UI and SA during a calendar year by the pattern of labour market participation during the same year. As the incidence of unemployment, EI/UI and SA are on an annual basis, measures differ from a point in time survey such as the EI Coverage Survey. The number of unemployed in the SCF will be substantially higher than would be as measured using the EI Coverage Survey. In particular, individuals with very brief spells of unemployment will be potentially counted by the SCF but not by the EI Coverage Survey. The incidence of public assistance programs among the unemployed will tend to be higher in the SCF than in

---

[5] The Sargent index of EI/UI disincentives is a measure of the EI/UI program that combines information on eligibility criteria and benefit duration averaged across individual EI/UI regions.

[6] The estimate of the national composite SA benefit rate is based on a weighted average of provincial composite benefit rates. Each provincial composite benefit rate is based on statutory benefit rates for different classes of SA case (Single employable, single parent, couple with two children) weighted by the shares of these cases in the total provincial SA caseload for 1995 (See National Council of Welfare (1997) for statutory SA rates). A composite benefit rate for Canada is obtained from provincial estimates by weighting across provinces using the provincial share of unemployed. A national estimate was also obtained using only provincial data on SA caseloads as weights. This composite value is somewhat higher than the estimate using provincial shares of unemployment.

cross-sectional surveys such as the EI Coverage Survey and can be difficult to interpret.[7] While there may be difficulties with the SCF in terms of under-reporting of EI/UI and SA use during the year, it at least provides an indication of trends, assuming that the degree of under-reporting does not change over time.

5.1 Change in distribution, 1987-1997

A general description of the pattern of change in EI/UI and SA incidence among the unemployed, as was done in the previous section, is a useful starting point. Consistent with the analysis in HRDC (1998), the incidence of EI/UI among the unemployed has declined. Table 2 shows data from 1987 and 1997 on the incidence of EI/UI alone, SA alone, EI/UI and SA during the same year among individuals who were unemployed at some point during the year. The number of individuals who had at least one spell of unemployment during the year remained relatively constant at approximately 3.0 million in both years. The share of individuals unemployed during the year that received EI/UI fell 6.9 percentage points to 52.6 per cent in 1997. By contrast, the importance of SA among the unemployed increased. In Table 2, the share who received SA (including those who received both EI/UI and SA) rose 4.4 percentage points to 18.3 per cent, an increase of 127,000 to 540,000. However, the share of unemployed that received SA alone rose more sharply by 5.3 percentage points to 14.3 per cent or an increase of 152,000 to 421,000. The share of unemployed who made use of both EI/UI and SA declined slightly while the share of individuals who were unemployed but who received neither EI/UI nor SA, rose from 31.4 per cent of the unemployed to 33.1 per cent. The incidence of SA use among the unemployed (including the unemployed in receipt of both EI/UI and SA) who also worked during the year rose from 11.5 per cent in 1987 to 12.3 per cent in 1997. The incidence of SA use among the long-term jobless increased more sharply from 36.0 per cent to 50.0 per cent.

Given the changes in EI/UI parameters between 1987 and 1997, the model in Chart 1c would predict a decline in the incidence of EI/UI among the unemployed and an increase in the incidence of SA. As shown in Chart 5a/b, the shift in the distribution of unemployed between 1987 and 1997 was from part-year employment and EI/UI to long-term joblessness and SA receipt. A description of how the figures in Chart 5a/b were arrived at is contained in Appendix A and Table A2. The share of the unemployed who both worked during the year and received EI/UI benefits (on line *b*) fell from 51.6 per cent of the unemployed to 46.3 per cent. The proportionately largest increase was in the numbers who had been jobless during the entire calendar year and had received SA, whose share of the unemployed rose from 6.6 per cent to 10.3 per cent, while there was almost no change in the share that had recently worked and received SA. This suggests that there are barriers to access SA that make it more likely that the unemployed will qualify only after they become long-term jobless and/or barriers to mixing part-year employment and SA potentially pushing individuals towards full-time reliance on SA.

---

[7] Relatively high measured incidence of the use of public assistance programs during a year among individuals who were unemployed during the year in the SCF may be compatible with much lower incidence measured by the EI Coverage Survey at a point in time. The higher incidence as measured by the SCF still means that spells of unemployment may be incompletely covered, such as when individuals exhaust EI benefits of in the case of multiple spells of unemployment where only one may be covered by EI. These cases would appear in the EI Coverage Survey as uncovered unemployment.

A weakness of the EI Coverage Survey as a tool to measure the impact of EI/UI program changes on SA use is that short spells of SA between job loss and the time of the survey are not counted. Incidence measure in the SCF, which provides information on the use of EI and SA over a one-year period, are at least one means of including shorter spells of EI and SA.

Table 2
Unemployed by receipt of public assistance programs by labour market status, 1987 and 1997

	1	(2)	3	(4)	5	(6)
	All unemployed	Incidence as a share of all unemployed (per cent)	Unemployed and employed in year	Incidence as a share of employed/ unemployed in year (per cent)	Unemployed only in year	Incidence as a share of unemployed only in year (per cent)
			1987			
Employment Insurance/ Unemployment Insurance (EI/UI)	1,769,000	59.5%	1,658,000	61.8%	111,000	38.7%
Received EI/UI only	1,625,000	54.7%	1,533,000	57.1%	92,000	32.0%
Received EI/UI and SA	144,000	4.9%	125,000	4.7%	19,000	6.6%
Social Assistance (SA)						
Received SA only	269,000	9.0%	184,000	6.9%	84,000	29.4%
Received neither EI/UI nor SA	933,000	31.4%	842,000	31.4%	92,000	31.9%
Total unemployed	2,971,000	**100.0%**	2,685,000	**100.0%**	287,000	**100.0%**
			1997			
Employment Insurance/ Unemployment Insurance (EI/UI)	1,553,000	52.6%	1,466,000	59.1%	86,000	18.3%
Received EI/UI only	1,434,000	48.6%	1,366,000	55.1%	67,000	14.3%
Received EI/UI and SA	119,000	4.0%	100,000	4.0%	19,000	4.0%
Social Assistance (SA)						
Received SA only	421,000	14.3%	204,000	8.2%	217,000	46.0%
Received neither EI/UI nor SA	978,000	33.1%	810,000	32.7%	168,000	35.7%
Total unemployed	2,952,000	**100.0%**	2,480,000	**100.0%**	472,000	**100.0%**
			1987-1997			
	Change in all unemployed	Change in incidence as a share of all unemployed (per cent)	Change in unemployed and employed during year	Change in incidence as a share of employed/ unemployed in year (per cent)	Change in unemployed only in year	Change in incidence as a share of unemployed only in year (per cent)
Employment Insurance (EI)	-216,000	-6.9%	-192,000	-2.6%	-24,000	-20.3%
Received EI only	-191,000	-6.1%	-167,000	-2.0%	-24,000	-17.7%
Received EI and SA	-26,000	-0.8%	-25,000	-0.6%	0	-2.6%
Social Assistance (SA)						
Received SA only	152,000	5.2%	20,000	1.4%	133,000	16.6%
Received neither EI nor SA	44,000	1.7%	-32,000	1.3%	77,000	3.8%
Total unemployed	-20,000	**0.0%**	-205,000	**0.7%**	185,000	**-3.8%**

Source: Statistics Canada, Survey of Consumer Finances, unpublished data.

5.2 Decomposition analysis

While the results presented in Chart 5a/b are consistent with the model presented in Chart 1c, it is possible that during the intervening period there was a change in the distribution of unemployed that influenced the results. A simple decomposition analysis can be used to distinguish between a shift in the distribution of the unemployed towards long-term joblessness and an increase in SA incidence among the long-term jobless, which at least provides a first approximation of the extent to which the change in SA incidence was within groups or a result of changes in the distribution of the unemployed. The decomposition equation is specified as follows:

$$
\begin{aligned}
&SA_{97}U_{97} - SA_{87}U_{87} - \left(LTJME_{97}U_{97} - LTJME_{87}U_{87}\right) * SALTJME_{87}/LTJME_{87} \\
&+ \left(LTJSE_{97}U_{97} - LTJSE_{87}U_{87}\right) * SALTJSE_{87}/LTJSE \\
&+ \left(STJME_{97}U_{97} - STJME_{87}U_{87}\right) * SASTJME_{87}/STJME_{87} \\
&+ \left(STJSE_{97}U_{97} - STJSE_{87}U_{87}\right) * SASTJSE_{87}/STJSE_{87} \\
&+ \left(SALTJME_{97}/LTJME_{97} - SALTJME_{87}/LTJME_{87}\right) * LTJME_{87}/U_{87} \\
&+ \left(SALTJSE_{97}/LTJSE_{97} - SALTJSE_{87}/LTJSE_{87}\right) * LTJSE_{87}/U_{87} \\
&+ \left(SASTJME_{97}/STJME_{97} - SASTJME_{87}/STJME_{87}\right) * STJME_{87}/U_{87} \\
&+ \left(SASTJSE_{97}/STJSE_{97} - SASTJSE_{87}/STJSE_{87}\right) * STJSE_{87}/U_{87} \\
&+ \left(LTJME_{97}/U_{97} - LTJME_{87}/U_{87}\right) * \left(SALTJME_{97}/LTJME_{97} - SALTJME_{87}/LTJME_{87}\right) \\
&+ \left(LTJSE_{97}/U_{97} - LTJSE_{87}/U_{87}\right) * \left(SALTJSE_{97}/LTJSE_{97} - SALTJSE_{87}/LTJSE_{87}\right) \\
&+ \left(STJME_{97}/U_{97} - STJME_{87}/U_{87}\right) * \left(SASTJME_{97}/STJME_{97} - SASTJME_{87}/STJME_{87}\right) \\
&+ \left(STJSE_{97}/U_{97} - STJSE_{87}/U_{87}\right) * \left(SASTJSE_{97}/STJSE_{97} - SASTJSE_{87}/STJSE_{87}\right)
\end{aligned}
$$

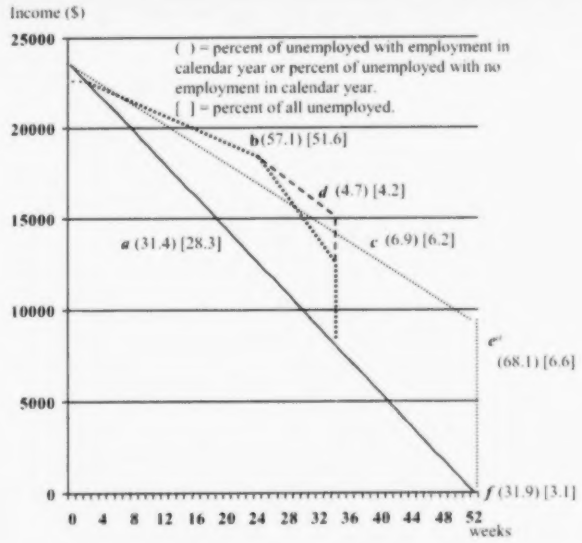
where SA refers to SA beneficiaries, U to the unemployed, LTJ refers to long-term joblessness, STJ refers to the short-term jobless, ME refers to the unemployed in households with more than one earner, while SE refers to the unemployed in households with no more than one earner.[8]

The sources of the increase in SA incidence can be broken down as follows: the first is that attributable to a change in the distribution of unemployed between those with employment in the previous 12 months and the long-term jobless, where SA incidence is much higher. This is reflected in the first four terms of equation 1. Apart from this, the change in the incidence of SA use within these two groups is likely to be important. This is reflected in the second four terms of equation 1. The last four terms, the interaction terms, play a role in the change in incidence, as their values depend on the change in SA incidence applied to the change in the share of unemployment. According to the findings of Gregg and Wadsworth (1996) and the OECD (1998) one would expect to find that the rise in the share of the long-term jobless has been concentrated among households with no other earner, and therefore SA use among this group should account for an important share of the overall rise in SA incidence. Consequently, the decomposition considers the share of individuals in single-earner households and those unemployed in households with more than one earner, within the long-term jobless and those unemployed with recent employment.

---

[8] The definition of multiple-earner and single-earner household varies somewhat depending on whether the unemployed individuals had employment during the year. For the unemployed who worked during the previous 12 months, a multiple-earner household is defined as one with two or more earners. For the unemployed who were jobless for the previous 12 months, a multiple-earner household is defined as a household where one or more individuals had earnings. This modification had only a very small impact on the results compared with restricting the definition of multiple-earner households to those with two or more earners.

Chart 5a
Budget Constraint with Employment Insurance (EI)/ Unemployment Insurance (UI) and Social Assistance (SA) Distribution of the unemployed, SCF 1987

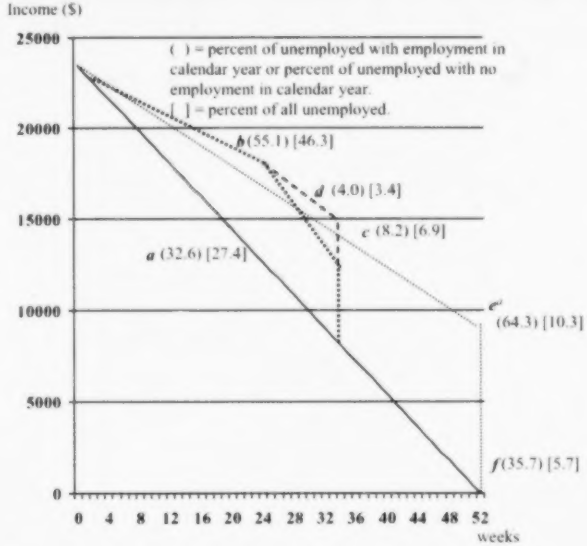

Income ($)
25000
20000
15000
10000
5000
0
( ) = percent of unemployed with employment in calendar year or percent of unemployed with no employment in calendar year.
[ ] = percent of all unemployed.
b (57.1) [51.6]
d (4.7) [4.2]
a (31.4) [28.3]
c (6.9) [6.2]
e' (68.1) [6.6]
f (31.9) [3.1]
0 4 8 12 16 20 24 28 32 36 40 44 48 52
weeks

Line *a* = budget constraint for wage earner.

Line *b* = Budget constraint for EI/UI recipient with recent employment.

Line *c* = Budget constraint for SA recipient with recent employment.

Chart 5b
Budget Constraint with Employment Insurance (EI)/ Unemployment Insurance (UI) and Social Assistance (SA) Distribution of the unemployed, SCF 1997


Income ($)
25000
20000
15000
10000
5000
0
( ) = percent of unemployed with employment in calendar year or percent of unemployed with no employment in calendar year.
[ ] = percent of all unemployed.
b (55.1) [46.3]
d (4.0) [3.4]
c (8.2) [6.9]
a (32.6) [27.4]
e' (64.3) [10.3]
f (35.7) [5.7]
0 4 8 12 16 20 24 28 32 36 40 44 48 52
weeks

Line *d* = Budget constraint for EI/UI and SA recipient with recent employment.

Point *e* = Income for SA recipient with no recent employment.

Point *f* = Individuals with no SA and no recent employment.

a) Point e includes individuals who received SA, EI or both EI and SA.

Source: Statistics Canada, Survey of Consumer Finances, unpublished data.

The pattern of the increase in SA use between 1987 and 1997 as shown in Table 3 is consistent with the model presented in Chart 1c. It also suggests that changes in SA incidence within groups played an important role and that therefore on a preliminary basis, the comparison in Charts 5a/b is valid. In general, the results indicate that both the rise in the share of long-term jobless among the unemployed and the increase in the incidence of SA use among the long-term jobless were the key factors that explain the overall increase in SA incidence among the unemployed. Furthermore, the net effect of both the decline in the share of short-term jobless offset by the rise in SA incidence among this group was practically zero. This pattern would be consistent with either the ineligibility of many recently unemployed for SA and/or barriers to mixing short-term employment and SA.

Table 3
Decomposition of the change in Social Assistance (SA) incidence, 1987-1997

	Change in distribution of the unemployed	
a	$\{(LTJME_{97}/U_{97} - LTJME_{87}/U_{87}) * SALTJME_{87}/LTJME_{87}\}$	0.36%
b	$\{(LTJSE_{97}/U_{97} - LTJSE_{87}/U_{87}) * SALTJSE_{87}/LTJSE_{87}\}$	2.32%
c	$\{(STJME_{97}/U_{97} - STJME_{87}/U_{87}) * SASTJME_{87}/STJME_{87}\}$	-0.74%
d	$\{(STJSE_{97}/U_{97} - STJSE_{87}/U_{87}) * SASTJSE_{87}/STJSE_{87}\}$	-0.01%
	Change in SA incidence	
e	$\{(SALTJME_{97}/LTJME_{97} - SALTJME_{87}/LTJME_{87}) * LTJME_{97}/U_{97}\}$	0.38%
f	$\{(SALTJSE_{97}/LTJSE_{97} - SALTJSE_{87}/LTJSE_{87}) * LTJSE_{97}/U_{97}\}$	0.65%
g	$\{(SASTJME_{97}/STJME_{97} - SASTJME_{87}/STJME_{87}) * STJME_{97}/U_{97}\}$	0.04%
h	$\{(SASTJSE_{97}/STJSE_{97} - SASTJSE_{87}/STJSE_{87}) * STJSE_{97}/U_{97}\}$	0.60%
	Interaction terms	
i	$\{(LTJME_{97}/U_{97} - LTJME_{87}/U_{87}) * (SALTJME_{97}/LTJME_{97} - SALTJME_{87}/LTJME_{87})\}$	0.11%
j	$\{(LTJSE_{97}/U_{97} - LTJSE_{87}/U_{87}) * (SALTJSE_{97}/LTJSE_{97} - SALTJSE_{87}/LTJSE_{87})\}$	0.69%
k	$\{(STJME_{97}/U_{97} - STJME_{87}/U_{87}) * (SASTJME_{97}/STJME_{97} - SASTJME_{87}/STJME_{87})\}$	0.00%
l	$\{(STJSE_{97}/U_{97} - STJSE_{87}/U_{87}) * (SASTJSE_{97}/STJSE_{97} - SASTJSE_{87}/STJSE_{87})\}$	0.00%
	Change in SA incidence within groups (e,f,g,h,i,j,k,l)	2.46%
	Change in SA incidence among the long-term jobless (e,f,i,j)	1.83%
	Change in SA incidence among the long-term jobless in multiple-earner households (*e,i*)	0.49%
	Change in SA incidence among the long-term jobless in single-earner households (*f,j*)	1.34%
	Change in SA incidence among the short-term jobless (g,h,k,l)	0.63%
	Change in SA incidence among the short-term jobless in multiple-earner households (*g,k*)	0.00%
	Change in SA incidence among the short-term jobless in single-earner households (*h,l*)	0.60%
	Change in distribution of the unemployed (a,b,c,d)	1.94%
	Change in share of long-term jobless among the unemployed (a,b)	2.69%
	Change in the share of long-term jobless in multiple-earner households (*a*)	0.36%
	Change in the share of long-term jobless in single-earner households (*b*)	2.32%
	Change in share of short-term jobless among the unemployed (c,d)	-0.75%
	Change in the share of short-term jobless in multiple-earner households (*c*)	-0.74%
	Change in the share of long-term jobless in single-earner households (*d*)	-0.01%
	SA incidence 1987	13.90%
	SA incidence 1997	18.29%
	Total change in SA incidence 1987-1997	4.39%

Source: Statistics Canada, Survey of Consumer Finances, unpublished data.

The details are as follows. Between 1987 and 1997, the incidence of SA use among the unemployed rose from 13.9 per cent to 18.3 per cent, or by 4.4 percentage points. The increase in the incidence of SA within the measured groups of unemployed (holding the distribution of unemployed across groups constant) accounted for the largest share, 2.5 percentage points, of the total increase. The chief factor was the 1.8 percentage-point increase in SA use among the long-term jobless. This increase was largely a result of an increase in the incidence of SA use among single-earner households, which rose 1.3 percentage points, while the incidence of SA use among the long-term jobless in multiple earner households accounted for 0.5 percentage points of the overall increase. While these groups are still very broadly defined, the pattern of increased SA incidence is consistent with the idea that SA eligibility criteria play an important role. The remaining 0.6 of a percentage point, a relatively small share, was a result of the increase in SA incidence among the short-term jobless in single-earner households. These were individuals who met SA entrance requirements shortly after leaving employment.

The change in the distribution of unemployed holding the incidence of SA constant within groups accounted for 1.9 percentage points of the overall increase in SA incidence. This 1.9 percentage point increase can be decomposed into the following: the increase in the share of the unemployed who were long-term jobless accounted for an increase of 2.6 percentage points in the overall rise of SA incidence, the majority of this increase having occurred among the unemployed in single-earner households. Conversely, the decline in the share of short-term jobless accounted for a 0.8 percentage point decline in the overall SA incidence rate.

5.3 Multivariate analysis

A multivariate analysis can establish whether there have been increases in the incidence of SA with groups between 1987 and 1997, controlling for changes in the distribution of the unemployed, and so support the comparison made in Charts 5a/b. A logistic functional form is used, defined as:

$$L = \frac{e^{\beta x}}{1 + e^{\beta x}}$$

where the dependent variable L equals 1 if the individual receives SA benefits during the year and 0 otherwise. The model can be transformed into the following equation:

$$Y = \beta X + u$$

where $Y = \ln\left(\frac{P}{1-P}\right)$ is the logistic, $P = \Pr\{L = 1 \mid X\}$, X is a vector of independent variables and

β is the vector of associated coefficients. The model is estimated using data from the SCF pooled over 1987 and 1997. The sample is limited to individuals who recorded at least one week of unemployment during the calendar year. Therefore the equation is respecified as

$$Y = \beta X + \delta XD_{97} + u$$

with a dummy variable D_{97} used to identify observations from the second year.

Table 4
Logit Regression for Social Assistance (SA) Incidence, 1987 and 1997[a]

Variable	coefficient	Mean (share of pop)	B*Mean	logit	Likelihood %	Std Error of coefficient	t statistic of coefficient	relative likelihood	Significance[b]
intercept	-3.842679	1	-3.8427	-2.0959	10.9498	0.0907998	-42.320	NA	***
Male	0.3636904	0.5600	0.2036	-1.9358	12.6106	0.0781508	4.654	1.3833	***
Female	0	0.4400	0.0000	-2.2995	9.1162	0	0	1.0000	
Male 1997	-0.1206674	0.2813	-0.0339	-2.1826	10.1323	0.1077964	-1.119	0.8978	
Female 1997	0	0.2171	0.0000	-2.0619	11.2852	0	0	1.0000	
age 15-24 yrs	-0.215461	0.2565	-0.0553	-2.2060	9.9210	0.090	-2.396	0.8254	**
age 25-44 yrs	0	0.5300	0.0000	-1.9906	12.0196	0	0	1.0000	
age 45+ yrs	-0.2344032	0.2135	-0.0500	-2.2250	9.7530	0.106	-2.216	0.8114	**
age 15-24 yrs 1997	-0.3762055	0.1074	-0.0404	-2.4054	8.2760	0.142	-2.645	0.7124	***
age 25-44 yrs 1997	0	0.2689	0.0000	-2.0292	11.6169	0	0	1.0000	
age 45+ yrs 1997	-0.2152311	0.1221	-0.0263	-2.2444	9.5829	0.143	-1.502	0.8249	
single	0.6366131	0.1679	0.1069	-1.9300	12.6754	0.1063114	5.988	1.7772	***
couple, 0 earners	1.999314	0.0235	0.0469	-0.5673	36.1867	0.2052593	9.740	5.0738	***
couple, 1 earner	0.9513181	0.1137	0.1082	-1.6153	16.5859	0.1171007	8.124	2.3256	***
couple, 2 earners	0	0.5605	0.0000	-2.5666	7.1320	0	0	1.0000	
single parent	1.464574	0.0898	0.1316	-1.1020	24.9363	0.1050553	13.941	3.4964	***
other families	1.729855	0.0446	0.0772	-0.8367	30.2224	0.1685454	10.263	4.2376	***
single 1997	0.5286092	0.0871	0.0460	-1.6060	16.7146	0.1443825	3.661	1.5801	***
couple, 0 earners, 1997	-0.3611358	0.0163	-0.0059	-2.4957	7.6157	0.2780847	-1.299	0.7200	
couple, 1 earners, 1997	-0.1308059	0.0575	-0.0075	-2.2654	9.4029	0.1767868	-0.740	0.8889	
couple, 2 earners, 1997	0	0.2649	0.0000	-2.1346	10.5779	0	0	1.0000	
single parent, 1997	0.1863053	0.0470	0.0088	-1.9483	12.4739	0.1520245	1.225	1.1792	
other families, 1997	-0.1052211	0.0256	-0.0027	-2.2398	9.6231	0.2356387	-0.447	0.9097	
Education less than grade 10	0.7075085	0.2610	0.1846	-1.7288	15.0737	0.0965066	7.331	1.8738	***
Education grades 11-13	0.4738737	0.3288	0.1558	-1.9625	12.3201	0.0951363	4.981	1.5315	***
Post secondary education	0	0.4102	0.0000	-2.4363	8.0443	0	0	1.0000	
Education less than grade 10 1997	-0.0296881	0.1023	-0.0030	-2.1018	10.8922	0.1336441	-0.222	0.9739	
Education grades 11-13 1997	-0.1451166	0.1428	-0.0207	-2.2172	9.8214	0.1287543	-1.127	0.8782	
Post secondary education 1997	0	0.2533	0.0000	-2.0721	11.1837	0	0	1.0000	
employed 0 weeks	1.039019	0.1280	0.1330	-1.3959	19.8468	0.121053	8.583	2.4640	***
employed 1- 5 weeks	1.022556	0.0440	0.0450	-1.4124	19.5862	0.1477027	6.923	2.4316	***
employed 6-10 weeks	0.7586641	0.0702	0.0533	-1.6763	15.7592	0.1222722	6.205	1.9565	***
employed 11-15 weeks	0.5069595	0.0761	0.0386	-1.9280	12.6977	0.13097	3.871	1.5764	***
employed 16-20 weeks	0.4587296	0.1092	0.0501	-1.9762	12.1726	0.121055	3.789	1.5112	***
employed 21-25 weeks	0.2865877	0.0666	0.0191	-2.1483	10.4487	0.1678081	1.708	1.2972	*
employed 26+ weeks	0	0.5058	0.0000	-2.4349	8.0548	0	0	1.0000	

Table 4 (Continued)
Logit Regression for Social Assistance (SA) Incidence, 1987 and 1997[a]

Variable	coefficient	Mean (share of pop)	B*Mean	logit	Likelihood %	Std Error of coefficient	t statistic of coefficient	relative likelihood	Significance[b]
employed 0 weeks, 1997	0.4606796	0.0796	0.0367	-1.6983	15.4687	0.165069	2.791	1.4946	***
employed 1- 5 weeks, 1997	-0.0859966	0.0221	-0.0019	-2.2450	9.5784	0.2317632	-0.371	0.9255	
employed 6 - 10 weeks, 1997	0.0436332	0.0305	0.0013	-2.1153	10.7614	0.1954759	0.223	1.0398	
employed 11- 15 weeks, 1997	0.2842098	0.0377	0.0107	-1.8748	13.2991	0.2003332	1.419	1.2850	
employed 16- 20 weeks, 1997	0.1899306	0.0531	0.0101	-1.9691	12.2491	0.1801503	1.054	1.1835	
employed 21- 25 weks, 1997	0.2069632	0.0300	0.0062	-1.9520	12.4334	0.2442026	0.848	1.2013	
employed 26+ weeks, 1997	0	0.2454	0.0000	-2.1590	10.3495	0	0	1.0000	
No EI/UI	1.048211	0.4391	0.4603	-1.5080	18.1240	0.0752154	13.936	2.5168	***
EI/UI	0	0.5609	0.0000	-2.5562	7.2012	0	0	1.0000	
No EI/UI, 1997	0.256101	0.2362	0.0605	-1.9003	13.0079	0.1115748	2.295	1.2539	**
EI/UI, 1997	0	0.2622	0.0000	-2.1564	10.3738	0	0	1.0000	
Observations	24.391								
Pseudo R^2	0.2049								
Model Chi Square	1852.77 (34 DF) (P=0.0000)								

a) The dependent variable for the logistic regression is 1 if the respondent was in a household that received SA during the calendar year and 0 otherwise.
b) One, two and three asterisks represent significance at the 10, 5 and 1 percent levels respectively.
NA: Not Applicable
Source: Statistics Canada, Survey of Consumer Finances, microdata.

The independent variables assumed to be associated with SA incidence are: gender, age, household status, (single, couple – no earner, couple – 1 earner, couple – 2 earners, single parent and other family), level of education, weeks of employment during the calendar year and receipt of EI/UI. All variables are measured as 0, 1 dummy variables with one group excluded (See Table 4). The impact of variables on SA incidence in 1987 is measured by β while the change in SA incidence between 1987 and 1997 is measured by δ. Table 4 presents "odds ratios" rather than regression coefficients. These indicate the relative likelihood of an individual with a particular characteristic of receiving SA during the year, relative to the excluded category. All other characteristics are held constant at the value of the mean for each factor. The estimated relative probabilities for the variables for 1997 show the change in the relative likelihood of SA use in comparison to the excluded group between 1987 and 1997.

The results of this regression support the view that the risk of SA use is notably higher for some groups, potentially reflecting SA eligibility criteria in some cases. Unemployed males were more likely to receive SA benefits than unemployed females. Prime age unemployed individuals, 25 to 44 years of age, were more likely to receive SA benefits than either younger or older unemployed. As expected, the unemployed who were in households where there is not another earner were significantly more likely to receive SA during the year, a feature of SA use that is directly related to SA eligibility criteria that use household income. The risk was greatest among the unemployed who were in households of couples with no earner, which incorporated the impact of long-term joblessness in a household, which itself was expected to be associated with increased SA use.[9] The unemployed classified by remaining household types at higher risk of SA were in descending order those in other families, single parents, couples with one earner and single individuals. The unemployed with 10 or fewer years of education were almost twice as likely to receive SA as were the unemployed with at least some post-secondary education. Those with between 11 and 13 years of education were about half again as likely to claim SA benefits as were those with at least some post-secondary education. For individuals unemployed at least one week during the year, non-receipt of EI/UI during the year was associated with a 2.5 times greater likelihood of receipt of SA. As the regression controlled for other factors likely to influence SA receipt, such as household status, weeks of work and level of education, this can be interpreted as a general estimate of the increased risk of SA use because an individual did not receive EI/UI benefits during the year.

The evidence is also consistent with the potential presence of barriers to mixing short-term employment and SA as suggested in Chart 1c. The unemployed with 0 weeks of employment during the year or with fewer than 10 weeks were at least twice as likely to receive SA. As the equation controlled for EI/UI use, this finding supports the hypothesis that short duration employment without EI/UI is associated with a higher risk of SA use. There was not also a great difference in the risk of SA use for individuals with 10 or fewer weeks of employment annually compared to joblessness during the calendar year. Despite the relatively high risk of SA receipt for individuals with 10 or fewer weeks of

[9] The variable for weeks of employment controls for the impact of long-term joblessness for an individual but not for other members of a household.

employment, there were relatively few individuals who mixed short-term employment and SA (See Table A2 and Chart 5a/b, line *c*). This suggests that the reason why there were relatively few individuals who combined short-term employment and SA was not associated with the risk of SA for these individuals but with the fact that there were few individuals with few weeks of employment and who did not qualify for EI. According to the standard labour leisure framework in Chart 1b, combining part-year employment and SA (points on line *c*) should be preferable to full-time dependence on SA (point *e*). Therefore, there must have been other factors that led individuals to leave short-term employment and turn to full-time dependence on SA. One potential cause is SA program eligibility criteria that make it difficult to combine short-term jobs and SA.

According to the modified labour-leisure model in Chart 1c, a decline in EI/UI incentives would lead individuals to switch from part-year employment and EI/UI to dependence on SA, though SA program characteristics explain their long-term joblessness. The risk of SA use among those jobless the entire year increased by almost 50 per cent relative to those with more than 26 weeks of employment during the year, after controlling for changes in the measured characteristics of the unemployed. This is a measured change in the incidence of SA associated with long-term joblessness itself and not with a change in the characteristics of the long-term jobless included in this regression. As well, the lack of increase in the probability of SA use for those with part-year employment controlling for changes in the distribution of measured characteristics of the unemployed means that a change in the characteristics of those with part-year employment does not explain the stability of the incidence of SA among this group. This pattern was predicted by the model described in Chart 1c.

Consistent with the modified model in Chart 1c, the link between non-receipt of EI/UI and SA increased in the range of 25 per cent between 1987 and 1997. Given the hypothesis that changes made to the EI/UI program over that period had led to a shift to SA use, a tighter link between non-receipt of EI/UI and receipt of SA would have been expected. This pattern could reflect the presence of employment constraints in the face of tighter EI/UI eligibility criteria. Employment-constrained individuals would have been less likely to qualify for EI/UI under the tightened eligibility rules and more would have exhausted EI/UI benefits at an earlier point in their unemployment spell. The increase in unemployment not covered by EI/UI may have led to increased use of SA by the unemployed. Another exception to the general stability in SA incidence was single individuals, who face a less binding SA household income constraint, where the risk of SA use increased by approximately 58 per cent relative to the risk for the unemployed in two-earner households. As the risk for the excluded group was relatively stable, this is a reasonable estimate of the actual change in risk for this group. The risk of SA use for single parents who were unemployed did not increase, though it was already at a relatively high level in 1987.

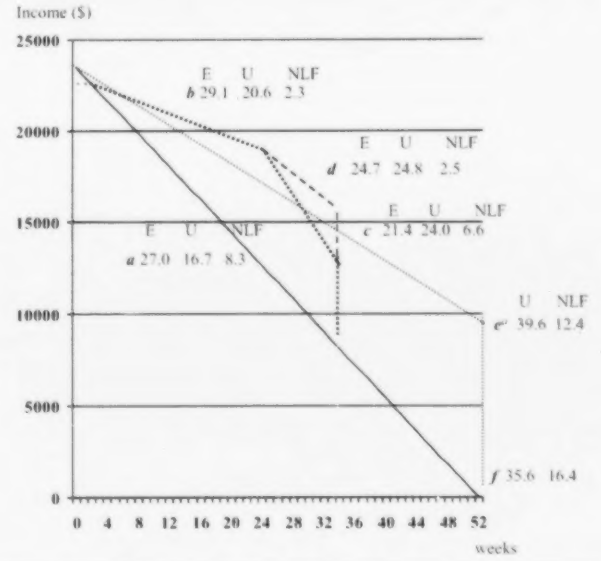
5.4 Labour force attachment

The labour market attachment of the long-term jobless is quite relevant to an assessment of whether significant numbers of individuals were employment-constrained. The labour force withdrawal of marginal workers in the face of changed EI/UI incentives would lead to a decline in average labour force attachment. Alternatively, an increase in the labour force attachment of the long-term jobless may stem from an increased number of individuals who may have failed to qualify for EI/UI and so ended up dependent on SA, combined with difficulty combining part-year work and SA.

Charts 6a and 6b present the average weeks of employment, unemployment and inactivity for the unemployed as distributed according to the model in Charts 1b. In general, the labour market attachment of the non-employed increased between 1987 and 1997. There was an increase in unemployment, largely at the expense of inactivity, across almost all groups unemployed at least one week during the year, regardless of where they are found at (lines *a*, *b*, *c* and point *e*). The only recorded decrease in average weeks of unemployment was for individuals with part-year employment, EI/UI and SA (on line *d*). The increase in unemployment duration was most marked for those not in receipt of EI, both among those who recently worked but had not qualified for EI/UI and among those who had not worked in the previous 12 months.

One potential explanation for increased job search among SA recipients is increased job search requirements in SA programs and reduced SA benefits. However, labour market attachment increased for both the long-term jobless in receipt of SA and those not in receipt of SA. This suggests that labour force attachment of the long-term jobless increased for reasons other than changes in SA program criteria. Growth in the average degree of labour market attachment of the long-term jobless would be consistent with the presence of significant numbers of individuals facing employment constraints. Increased job search would be expected if individuals had to turn to SA because they were unable to find long-enough duration jobs. It is not consistent with a withdrawal from the labour force based on an increase in the benefits of SA relative to part-year employment and EI/UI as predicted by the standard labour-leisure model.

Chart 6a
Budget Constraint with Employment Insurance (EI)/ Unemployment Insurance (UI) and Social Assistance (SA) Average weeks of employment, unemployment and inactivity, SCF 1987

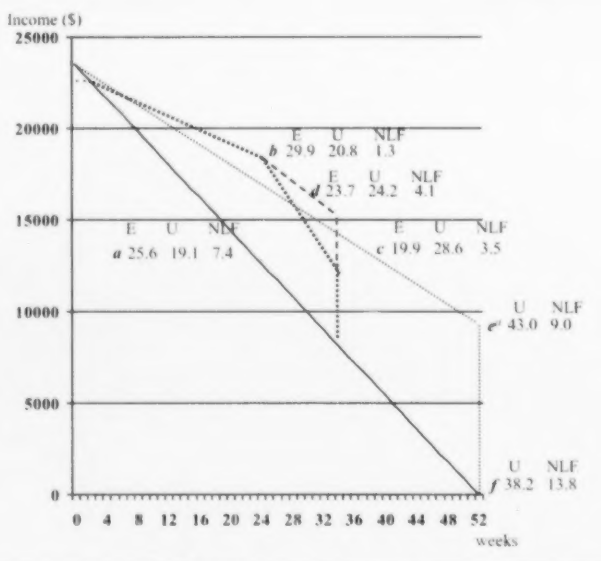


Line *a* = budget constraint for wage earner.

Line *b* = Budget constraint for EI/UI recipient with recent employment.

Line *c* = Budget constraint for SA recipient with recent employment.

Chart 6b
Budget Constraint with Employment Insurance (EI)/ Unemployment Insurance (UI) and Social Assistance (SA) Average weeks of employment, unemployment and inactivity, SCF 1997



Line *d* = Budget constraint for EI/UI and SA recipient with recent employment.

Point *e* = Income for SA recipient with no recent employment.

Point *f* = Individuals with no SA and no recent employment.

a) Point *e* includes individuals who received SA, EI/UI or both EI/UI and SA.

Source: Statistics Canada, Survey of Consumer Finances, unpublished data.

6. Conclusions

Most research on Employment Insurance (EI)/Unemployment Insurance (UI) and Social Assistance uses (SA) a labour-leisure model with a corner solution for SA based on tax-back rates in SA programs. This paper proposes an alternative model where the corner solution for SA reappears because of constraints both on access to SA benefits, notably means testing of both household income and assets, as well as the difficulty mixing short-term employment with SA. Barriers to taking temporary employment once in receipt of SA such as a high tax back rate, uncertainty over the application of means-tested criteria if reapplying for SA and administrative barriers to starting and stopping benefits may push the unemployed in receipt of SA to leave employment entirely. Therefore, individuals who face employment barriers may be pushed towards SA and subsequently, to abandon employment entirely by SA program requirements.

Evidence from the EI Coverage Survey for 1999 is consistent with significant numbers of unemployed reacting according to the revised model of EI and SA which incorporates constraints on SA use. EI use was concentrated among the unemployed with recent employment, while SA use was concentrated among the long-term jobless. The fact that few individuals combined EI and SA during the same year is consistent with the importance of barriers to entry to SA and/or difficulties mixing short-term jobs and SA. There was less evidence that significant numbers of individuals were acting under employment constraints. In general, the long period that elapsed between the moment individuals separated from employment and the moment when they claimed SA, suggests a longer-term transition which is more consistent with the presence of significant numbers of employment-constrained individuals. In particular, the pattern of entry into dependence on SA is more consistent the presence of employment constraints, rather than incentives to opt for full-time dependence on SA over part-year employment and EI. On average, the transition from non-receipt of EI benefits to SA use was longer-term and relatively few long-term jobless qualified for EI in their last spell of employment, leading to a potentially long period of joblessness with no income support from public programs.

Over the period 1987-1997, the shift was from part-year employment and EI to long-term joblessness supported by SA which is consistent with the modified labour leisure model proposed in this paper. A multivariate analysis suggests that unemployed individuals not eligible for EI/UI face an increased high risk of SA use. The fact that there were relatively few unemployed who combined part-year employment and SA suggests that there are barriers to combining short-term jobs and SA. Finally, job search among the long-term jobless has increased over time, suggesting that the employment constraints faced by individuals have become more binding rather than a withdrawal from the labour market in response to a decline in the relative incentives of the EI/UI program. Individuals facing employment barriers may therefore not appear as SA clients until some time has passed and their labour market participation may be altered by the structure of the SA program.

Annex A

This annex contains a brief explanation of how the estimates of EI and SA incidence using the EI Coverage Survey for 1999 among the unemployed in Chart 2 were derived from Table 1. Following this is a brief explanation of the derivation from Table 2 of EI and SA incidence in Charts 5a/b using the Survey of Consumer Finances for 1987 and 1997. Detailed estimates of the sources of the estimates in Chart 2 are presented in Table A1, where each category used in Chart 2, for example line *a*, is broken down into its sub-groups, as defined in Table 1. In panel a of Table A1, the actual estimates are given, as transcribed from Table 1. A broad approach is taken to determining the numbers who received EI benefits. In the case of the EI Coverage Survey, this was defined as the number who were eligible to receive EI benefits. The numbers of individuals with recent employment but no public income support was comprised of among others of individuals who became unemployed but did not meet EI entrance requirements. The total was 118,000 in column 1a of Table 1 less 25,000 who received SA benefits in column 1c. Similar estimates were obtained for the other categories included under line *a*, namely the self-employed, unemployed who had left employment to go to school and those who had voluntarily quit without just cause. None of these groups of unemployed were eligible to receive EI benefits. Less the numbers of unemployed in these categories who received SA benefits gave a total of 253,000. The share of all unemployed who did not receive either EI benefits or SA benefits was 22.2 per cent (Panel b of Table A1). Their share of all unemployed who were employed during the previous 12 months was 32.8 per cent (panel c of Table A1). These percentages appear in Chart 2.

The number who were classed as receiving EI benefits and not SA benefits (on line *b*) was 459,000. This was derived from the number of unemployed who met EI entrance requirements, 473,000 in Table 1, less 14,000 of these who were receiving SA benefits. It is evident that not all of those who met EI entrance requirements were in receipt of EI benefits at the time of the survey. However, it was assumed that those who have not will ultimately receive benefits that may be retroactive to the date of their job loss. Those at point *b* included those who did not claim EI benefits, as it assumed that the reasons for not claiming benefits were complex, therefore it was difficult to exclude this group. They also included those who did not receive benefits, under the assumption that many would ultimately receive benefits. As well, they included those who exhausted EI benefits, as these individuals had also worked in the last 12 months. Finally, they included individuals waiting for benefits, assuming that benefits would shortly be forthcoming. Those at point *b* accounted for 40.2 per cent of the unemployed and 59.3 per cent of the unemployed with employment in the previous 12 months, both of which appear in Chart 2.

Table A1
Underlying data from the EI Coverage Survey for Chart 2, 1999

(a)

	With employment only in past 12 months			No employment in past 12 months		
	No public income support	EI recipient	SA recipient	No public income support	EI and/or SA recipient	Total
Line a, Employment in the last						
12 months, no EI or SA	253,000		..	..	..	
Did not meet entrance requirement	93,000		..	..	..	
Self employed	47,000		..	..	..	
Left to school	52,000		..	..	..	
Voluntary quit with no just cause	61,000		..	..	..	
Line b, Employment in the last						
12 months and eligibility for EI	..	459,000	..	..	..	
Met EI entrance requirement	..	459,000	..	..	..	
Line c, Employment in the last						
12 months, receipt of SA	..	..	47,000	..	..	
Did not meet EI entrance requirement	..	..	25,000	..	..	
Self employed	..	..	9,000	..	..	
Left to school	..	..	1,000	..	..	
Voluntary quit with no just cause	..	..	13,000	..	..	
Line d, Employment in the last 12 months,		..		..	..	
eligibility for EI, receipt of SA	..		14,000			
Exhausted EI benefits	..	..	6,000	..	..	
Others who met EI entrance		..		..	..	
requirements	..		9,000			
				..	..	
Point e, No employment in the last				..		
12 months, receipt of SA	..		..		97,000	
New entrant	..	..	..	..	11,000	
Worked more than one year ago	..	..	..	..	86,000	
Point f, No employment in the past		..				
12 months, non receipt of SA	..		..	270,000	..	
New entrant	..	..	..	98,000	..	
Worked more than one year ago	..	..	..	172,000	..	
Total	253,000	459,000	62,000	270,000	97,000	1,141,000
		774,000			367,000	

(b)

	Percent of all unemployed					
	With employment only in past 12 months			No employment in past 12 months		
	No public income support	EI recipient	SA recipient	No public income support	EI and/or SA recipient	
Line a, Employment in the last						
12 months, no EI or SA	22.2%	..	..	..	..	
Did not meet entrance requirement	8.2%	..	..	..	..	
Self employed	4.1%	..	..	..	..	
Left to school	4.5%	..	..	..	..	
Voluntary quit with no just cause	5.4%	..	..	..	..	
Line b, Employment in the last						
12 months and eligibility for EI	..	40.2%		..	..	
Met EI entrance requirement	..	40.2%		..	..	
Line c, Employment in the last						
12 months, receipt of SA	..	..	4.2%	..	..	
Did not meet EI entrance requirement	..	..	2.2%	..	..	
Self employed	..	..	0.8%	..	..	
Left to school	..	..	0.1%	..	..	
Voluntary quit with no just cause	..	..	1.1%	..	..	

Table A1 (Continued)
Underlying data from the EI Coverage Survey for Chart 2, 1999

	No public income support	EI recipient	SA recipient	No public income support	EI and/or SA recipient	
Line d, Employment in the last 12 months, eligibility for EI, receipt of SA		..	*1.3%*	..	..	
Exhausted EI benefits			0.5%			
Others who met EI entrance requirements	..	..	0.8%	..	..	
Point e, No employment in the last 12 months, receipt of SA	..	..	..	..	*8.5%*	
New entrant	..	..	..	..	0.9%	
Worked more than one year ago	..	..	..	..	7.6%	
Point f, No employment in the past 12 months, non receipt of SA	..	..	..	*23.7%*	..	
New entrant	..	..	..	8.6%	..	
Worked more than one year ago	..	..	..	15.1%	..	
Total	*22.2%*	*40.2%*	*5.4%*	*23.7%*	*8.5%*	100%

(c)

	Percent of unemployed with employment in past 12 months			**Percent of unemployed with no employment in the past 12 months**		
	No public income support	EI recipient	SA recipient	No public income support	EI and/or SA recipient	
Line a, Employment in the last 12 months, no EI or SA	*32.8%*	..	..	..	..	
Did not meet entrance requirement	12.0%	..	..	..	..	
Self employed	6.1%	..	..	..	..	
Left to school	6.7%	..	..	..	..	
Voluntary quit with no just cause	7.9%	..	..	..	..	
Line b, Employment in the last 12 months and eligibility for EI	..	*59.3%*	..	..	..	
Met EI entrance requirement		59.3%	..	..	..	
Line c, Employment in the last 12 months, receipt of SA	..	..	*6.1%*	..	..	
Did not meet EI entrance requirement	..	..	3.2%	..	..	
Self employed	..	..	1.1%	..	..	
Left to school	..	..	0.1%	..	..	
Voluntary quit with no just cause	..	..	1.6%	..	..	
Line d, Employment in the last 12 months, eligibility for EI, receipt of SA		..	*1.8%*	..	..	
Exhausted EI benefits			*0.7%*			
Others who met EI entrance requirements	..	..	*1.1%*	..	..	
Point e, No employment in the last 12 months, receipt of SA	..	..	..	..	*26.4%*	
New entrant	..	..	..	..	2.9%	
Worked more than one year ago	..	..	..	..	23.5%	
Point f, No employment in the past 12 months, non receipt of SA	..	..	..	73.6%	..	
New entrant	..	..	..	26.7%	..	
Worked more than one year ago	..	..	..	46.9%	..	
Total	*32.8%*	*59.3%*	*8.0%*	*73.6%*	*26.4%*	
	100.0%			100.0%		

Source: Statistics Canada, EI Coverage Survey, unpublished data, 1999.

Those who were employed in the past 12 months and received only SA benefits (on line *c*) numbered 47,000. This is comprised of those in the same categories that were included in line *a* (i.e. those not eligible for EI) and who also were receiving SA benefits at the time of the survey. They accounted for 4.2 per cent of the unemployed and 6.1 per cent of the unemployed who worked in the previous 12 months, both of which appear in Chart 2. The unemployed who had worked in the previous 12 months and who had received both EI and SA (on line *d*) numbered 14,000. They were those who met EI entrance requirement and who were receiving SA at the time of the survey. They included those who had exhausted EI benefits and subsequently received SA benefits (6,000). They accounted for 1.3 per cent of all the unemployed and 1.8 per cent of the unemployed with employment in the previous 12 months, both of which appear in Chart 2. Those unemployed with no work in the previous 12 months and who were receiving SA (at point *e*) numbered 97,000. They were comprised of two categories taken from Table 1, new entrants and those who previously worked but more than one year prior, and among these two groups, those who received SA benefits. They accounted for 8.5 per cent of all the unemployed and 26.4 per cent of the unemployed with no employment in the previous 12 months, both of which appear in Chart 2. Finally, those with no employment during the previous 12 months and who did not receive SA benefits (point *f*) numbered 270,000. They comprised the same two categories as were included in point *e* (new entrants and those who previously worked but with no employment in the previous 12 months) however among these two populations, only those who did not receive SA benefits were included. They accounted for 23.7 per cent of all the unemployed and 73.6 per cent of the unemployed with no employment in the previous 12 months, both of which appear in Chart 2.

Table A2 presents detailed data of the estimates presented in Charts 5a/b. Panel a of A2 contains the actual number of unemployed. The description that follows covers 1987, however the same applies to 1997. Those who were employed at some point during calendar 1987 and received neither EI/UI benefits nor SA during the year (on line *a*) numbered 842,000, taken directly from Table 2. Their share of all unemployed was 28.3 per cent (Panel b of Table A2), while their share of those unemployed with employment during 1987 was 31.4 per cent (Panel c of Table A2), both of which appear in Chart 5a. Those unemployed who received only EI/UI benefits during 1987 and also worked during the year (on line *b*) numbered 1,533, 000, taken directly from Table 2. They accounted for 51.6 per cent of all the unemployed or 57.1 per cent of the unemployed with employment during 1987, both of which appear in Chart 5a. The unemployed who worked in 1987 and who received SA benefits only (on line *c*) numbered 184,000, also taken directly from the estimate provided in Table 2. They accounted for 6.2 per cent of all unemployed or 6.9 per cent of the unemployed with employment during 1987, both of which appear in Chart 5a. The unemployed with employment during 1987 who received both EI/UI and SA benefits during the year (on line *d*) numbered 125,000, which also appears in Table 2. Their share of all unemployed was 4.2 per cent and of the unemployed with employment in 1987 was 4.7 per cent, both of which appear in Chart 5a.

The estimate of the unemployed who did not work during 1987 (the long-term jobless) but who received SA benefits (point *e*) numbered 195,000. It included those who received only SA benefits (84,000), those who received both EI/UI and SA benefits (19,000) and those who received EI/UI benefits (92,000), all of which were taken from Table 2. They accounted for 6.6 per cent of all unemployed and 68.1 per cent of the unemployed who had no employment during 1987, both of which appear in Chart 5a.

The inclusion of individuals who received EI/UI benefits in point *e* reflected a greater importance given to their labour market participation of individuals than to their income support. Though individuals received EI/UI benefits during the year, because they had no employment, these benefits reflected employment in the previous year. Moreover, there was no employment following the end of benefit receipt. Therefore, the labour market situation of these individuals would seem closer to individuals at point *e* than to those on line *b*. Those with no employment during 1987 and not in receipt of benefits from any program (at point *f*) numbered 92,000 or 3.1 per cent of the unemployed or 31.9 per cent of the unemployed with no employment in 1987, both of which appear in Chart 5a.

Table A2
Underlying data for Chart 4a/b from Table 2, 1987 and 1997

1987 (a)						
	With employment only in past 12 months			No employment in past 12 months		
	No public income support	EI/UI recipient	SA recipient	No public income support	EI/UI and/or SA recipient	Total
Line a, Employment in the last 12 months, no EI/UI or SA	842,000		..	..	..	
Line b, Employment in the last 12 months and received EI/UI	..	1,533,000	..	..	..	
Line c, Employment in the last 12 months, receipt of SA	..	..	184,000	..	..	
Line d, Employment in the last 12 months, received EI/UI and SA	..	..	125,000	..	..	
Point e, No employment in the last 12 months, receipt of EI/UI or SA	..	..	..	..	195,000	
Receipt of EI/UI only	..	..	..	..	92,000	
Receipt of EI/UI and SA					19,000	
Receipt of SA only	..	..	..	..	84,000	
Point f, No employment in the past 12 months, non receipt of SA	..	..	..	92,000	..	
Total	842,000	1,533,000	309,000	92,000	195,000	
	2,685,000			287,000		2,971,000
1987 (b)						
	Percent of all unemployed					
	With employment only in past 12 months			No employment in past 12 months		
	No public income support	EI/UI recipient	SA recipient	No public income support	EI/UI and/or SA recipient	Total
Line a, Employment in the last 12 months, no EI/UI or SA	28.3%		..	..	..	
Line b, Employment in the last 12 months and received EI/UI	..	51.6%	..	..	..	
Line c, Employment in the last 12 months, receipt of SA	..	..	6.2%	..	..	
Line d, Employment in the last 12 months, received EI/UI and SA	..	..	4.2%	..	..	
Point e, No employment in the last 12 months, receipt of EI/UI or SA	..	..	..	..	6.6%	
Receipt of EI/UI only	..	..	..	..	3.1%	
Receipt of EI/UI and SA					0.6%	
Receipt of SA only	..	..	..	..	2.8%	
Point f, No employment in the past 12 months, non receipt of SA	..	..	..	3.1%	..	
Total	*28.3%*	*51.6%*	*10.4%*	*3.1%*	*6.6%*	100.0%

Table A2 (Continued)
Underlying data for Chart 4a/b from Table 2, 1987 and 1997

1987 (c)

	Percent of unemployed with employment in past 12 months			Percent of unemployed with no employment in the past 12 months		
	No public income support	EI/UI recipient	SA recipient	No public income support	EI/UI and/or SA recipient	
Line a, Employment in the last 12 months, no EI/UI or SA	31.4%		..	..	..	
Line b, Employment in the last 12 months and received EI/UI	..	57.1%	..	..	..	
Line c, Employment in the last 12 months, receipt of SA	..	..	6.9%	..	..	
Line d, Employment in the last 12 months, received EI/UI and SA	..	..	4.7%	..	..	
Point e, No employment in the last 12 months, receipt of EI/UI or SA	..	..	..	..	68.1%	
Receipt of EI/UI only	..	..	..	..	32.0%	
Receipt of EI/UI and SA					6.6%	
Receipt of SA only	..	..	..	..	29.4%	
Point f, No employment in the past 12 months, non receipt of SA	..	..	..	31.9%		
Total	*31.4%*	*57.1%*	*11.5%*	*31.9%*	*68.1%*	
	100.0%			100.0%		

1997 (a)

	With employment only in past 12 months			No employment in past 12 months		Total
	No public income support	EI/UI recipient	SA recipient	No public income support	EI/UI and/or SA recipient	
Line a, Employment in the last 12 months, no EI/UI or SA	810,000		..	..	..	
Line b, Employment in the last 12 months and received EI/UI	..	1,366,000	..	..	..	
Line c, Employment in the last 12 months, receipt of SA	..	..	204,000	..	..	
Line d, Employment in the last 12 months, received EI/UI and SA	..	..	100,000	..	..	
Point e, No employment in the last 12 months, receipt of EI/UI or SA	..	..	..	..	303,000	
Receipt of EI/UI only	..	..	..	..	67,000	
Receipt of EI/UI and SA					19,000	
Receipt of SA only	..	..	..	..	217,000	
Point f, No employment in the past 12 months, non receipt of SA	..	..	..	168,000	..	
Total	810,000	1,366,000	304,000	168,000	303,000	
	2,480,000			472,000		2,952,000

Table A2 (Continued)
Underlying data for Chart 4a/b from Table 2, 1987 and 1997

1997 (b)

	Percent of all unemployed					
	Percent of unemployed with employment in past 12 months			Percent of unemployed with no employment in the past 12 months		Total
	No public income support	EI/UI recipient	SA recipient	No public income support	EI/UI and/or SA recipient	
Line a, Employment in the last 12 months, no EI/UI or SA	27.4%		..	..	..	
Line b, Employment in the last 12 months and received EI/UI	..	46.3%	..	..	..	
Line c, Employment in the last 12 months, receipt of SA	..	..	6.9%	..	..	
Line d, Employment in the last 12 months, received EI/UI and SA	..	..	3.4%	..	..	
Point e, No employment in the last 12 months, receipt of EI/UI or SA	..	..	..	..	10.3%	
Receipt of EI/UI only	..	..	..	..	2.3%	
Receipt of EI/UI and SA					0.6%	
Receipt of SA only	..	..	..	..	7.3%	
Point f, No employment in the past 12 months, non receipt of SA	..	..	..	5.7%	..	
Total	*27.4%*	*46.3%*	*10.3%*	*5.7%*	*10.3%*	100.0%

1997 (c)

	Percent of unemployed with employment in past 12 months			Percent of unemployed with no employment in the past 12 months		
	No public income support	EI/UI recipient	SA recipient	No public income support	EI/UI and/or SA recipient	
Line a, Employment in the last 12 months, no EI/UI or SA	32.6%		..	..	..	
Line b, Employment in the last 12 months and received EI/UI	..	55.1%	..	..	..	
Line c, Employment in the last 12 months, receipt of SA	..	..	8.2%	..	..	
Line d, Employment in the last 12 months, received EI/UI and SA	..	..	4.0%	..	..	
Point e, No employment in the last 12 months, receipt of EI/UI or SA	..	..	..	..	64.3%	
Receipt of EI/UI only	..	..	..	..	14.3%	
Receipt of EI/UI and SA					4.0%	
Receipt of SA only	..	..	..	..	46.0%	
Point f, No employment in the past 12 months, non receipt of SA	..	..	..	35.7%	..	
Total	*32.6%*	*55.1%*	*12.3%*	*35.7%*	*64.3%*	
	100.0%			100.0%		

Source: Statistics Canada, Survey of Consumer Finances, unpublished data, 1987 and 1997.

Bibliography

Arnau, P., Crémieux, P.-Y., Fortin. P., (1998), "The Determinants of Social Assistance Rates: Evidence from a Panel of Canadian Provinces", 1977-1996.

Atkinson, A.B. (1991) "Social insurance: the Fifteenth Annual Lecture of the Geneva Association", *The Geneva Papers on Risk and Insurance*, Vol. 16, No. 2, pp. 113-132.

Atkinson, A.B. and Micklewright, J. (1991), "Unemployment Compensation and Labour Market Transitions", *Journal of Economic Literature*, Vol. XXIX, December, pp. 1679-1727.

Barrett, A.J., Doiron, D.J., Green D. and Riddell, W.C. (1996), *UI : The Interaction of Unemployment Insurance and Social Assistance*, Ottawa, Human Resources Development Canada.

Browning, M., Jones, S. and Kuhn, P., (1995), "Studies of the Interaction of UI and Welfare Using the COEP Dataset", HRDC-DRHC, Evaluation Technical Report Number 25.

Christofides, L.N., Stengos, T. and Swidinsky, R. (1997), Welfare participation and labour market behaviour in Canada", *Canadian Journal of Economics*, Vol. XXX, No. 3, August, pp. 595-621.

Fortin, B., Lacroix, G. and Thibault, J.-F. (1999), "The Interaction of UI and Welfare, and the Dynamics of Welfare Participation of Single Parents", *Canadian Public Policy – Analyse de Politiques*, Volume XXV, Supplement 1, November, pp. S115-S132.

Fortin, P. (1984), "Unemployment Insurance Meets the Classical Labor Supply Model", *Economic Letters*, 14, pp. 275-281.

Gregg, P. and Wadsworth, J. (1996), "It Takes Two: Employment Polarisation in the OECD", Centre for Economic Performance, Discussion Paper No. 304.

Human Resources Development Canada (1998), *An analysis of Employment Insurance Benefit Coverage*, Human Resources Development Canada (HRDC-DRHC), Applied Research Branch, Working paper W-98-35E.

National Council on Welfare (1993), *Incentives and Disincentive to Work*, Minister of Public Works and Government Services, Ottawa.

National Council on Welfare (1997), *Welfare Incomes 1996*, Minister of Public Works and Government Services, Ottawa.

National Council on Welfare (2000), *Welfare Incomes 1997 and 1998*, Minister of Public Works and Government Services, Ottawa.

OECD (1998), *Employment Outlook*, OECD, Paris.

OECD (1999a), *Benefit Systems and Work Incentives*, Paris.

OECD (1999b), *The Battle Against Exclusion, Volume 3, Social Assistance in Canada and Switzerland*, Paris.

Phipps, S. (1990), "Quantity-Constrained Household Responses to Unemployment Insurance Reform", *Economic Journal*, Vol. 100, No. 399, March 1990, pp. 124-140.

Phipps, S. (1991), Behavioural response to UI reform in constrained and unconstrained models of labour supply", *Canadian Journal of Economics*, Vol. XXIV, No. 1, February, pp. 34-54.

Sargent, T.C. (1995), "An Index of Unemployment Insurance Disincentives", Working Paper No. 95-10, Economic and Fiscal Policy Branch, Department of Finance, December.

Stark, A.A. (1997), "An Examination of the Growth of Social Assistance Receipt in Canada", Mimeo, Department of Economics, University of British Columbia.

Stark, A.A. (1998), "The Growth of Social Assistance Receipt in Canada: A Disaggregated Approach", Mimeo, Department of Economics, University of British Columbia.

Stark, A.A. (1999), "The Transition from Employment to Welfare: An Analysis using LMAS Microdata", Canadian Economics Association, May.

Statistics Canada-Statistique Canada (1999), "Report on the Main Results of the Employment Insurance Coverage Survey, 1998", Catalogue no. 73F0008XPE.

Stewart, J. and Dooley, M. (1998), "An Analysis of Changes in Welfare Participation Rates in Ontario From 1983-1994 using Social Assistance Caseload Data", Mimeo, Department of Economics, McMaster University.